

## ON CENTRAL AUSTRALIAN MAMMALS

### PART IV—THE DISTRIBUTION AND STATUS OF CENTRAL AUSTRALIAN SPECIES

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Fig. 1

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#### INTRODUCTION

The recent appointment by the Commonwealth Government of a full-time biological officer based on Alice Springs, with a major commitment in field work on mammals in Central Australia, draws attention again to the paucity of published information on the above heads upon which such work may be based. Under modern conditions the opportunities of making further contributions in this field are now much less favourable than formerly, owing to the growing rarity of

most species and to the decline and changed interests of the aboriginal population, formerly one of the most prolific sources of such information. To augment the published data may well help to reduce this disability, and (departing from the planned sequence of this series of papers) the present contribution has been compiled with that end in view.

Its primary object is to give in summary form the relevant results of field work carried out by the present writer in a series of journeys in Central Australia in two widely separated periods, namely 1931-1935 and 1950-1956, during which a total of 27 months were spent in the country. The work of the earlier period was based chiefly in the south-western sector, in the great confluent Aboriginal Reserves of South, West and Central Australia and at a time when conditions there were still virgin and very favourable for the purpose, both the mammal fauna and the aboriginal population, being virtually undisturbed. In the later period the work was extended to districts further north and east, mostly in areas of pastoral occupation where aborigines, though still present, were detribalized in varying degree.

#### THE SOURCES OF THE INFORMATION SUMMARIZED

The information on each species is arranged in the following sequence:—

- Aboriginal names;
- General distribution;
- Present status;
- Material personally examined;
- Other remarks;

and it embodies four categories of data, as follows:—

1. THE RESULTS OF PERSONAL OBSERVATION AND COLLECTING.
2. THE RESULTS OF INTERROGATION OF ABORIGINES.

In recent years there has been in some quarters overseas a tendency to depreciate the value of the testimony of native peoples in such matters. Undoubtedly it is easy to be misled by casual methods of enquiry and possible to be misled even when the most careful methods are employed. But the systematic interrogation of aborigines in this country has yielded so much of value in the past, that no-one with a knowledge of the special conditions which obtain in Central Australia—where hunting was formerly the sole means of subsistence of the aboriginal population and followed with a marvellously

cultivated technique—would suggest that this source of information could be neglected or even relegated to a subordinate position. Indeed had its value been recognized earlier and the much greater opportunities of 50 years ago seized and vigorously exploited, we would not have to deplore the great and probably permanent hiatuses which exist in our knowledge today. The information here presented has been obtained, whenever possible, by placing authentic specimens of the various known mammals in the hands of natives of both sexes and allowing them to freely examine and consider them, and the results so obtained have in many cases been cross checked by interrogation of widely separated groups.

In quoting native names of mammals, the intention has been to place a practical tool into the hands of others, rather than to make any formal contribution to aboriginal vocabularies, and for this purpose there are some advantages in partially anglicized forms rather than in those involving special phonetic symbols, which are little used or understood beyond anthropological circles. This applies to the names of native groups also, where I have for the most part used the name or names actually given me at the time. These do not always agree with the standard form adopted by Tindale (1940) but are usually close to one or more of the anglicized variants or alternatives listed by him. The approximate tribal boundaries as given by Tindale are no doubt also an approximate guide to the former currency of names of fauna, but under modern conditions where considerable infiltration, merging of minorities, or even complete replacement of aboriginal populations by neighbouring groups, has taken place, I have found that words may occasionally be heard in normal use far beyond these boundaries. Many of the vocabularies used by natives for fauna when these observations were made, had a dual basis owing to this merging or replacement of adjacent tribes and it has usually not been expedient, and sometimes not possible to make a complete separation of the original elements. This applies for instance to the Wonkanooroo and Dieri of the Lake Eyre Basin, Yankunjarra and Pitjanjarra of the Everard and Musgrave Range area, Arunta and Ilyowra of the Eastern Macdonnells, Tchingilli and Mudburra of Daly Waters, Walpari and Warramunga of the Davenport Range, and others.

The names recorded are those actually met with in the areas personally worked over and I make no attempt to compile lists by drawing on other sources such as Stirling and Spencer, Spencer and Gillen, Strehlow *sr.*, Helms, Black, etc., partly because these vocabularies are readily available and partly because the identity of the

species in question is sometimes in doubt. In a few cases where a name of special interest is quoted from another work, the source is indicated with it.

### 3. LOCALITY RECORDS OF MATERIAL PERSONALLY EXAMINED AND IDENTIFIED.

This is undoubtedly the most satisfactory type of evidence on which to base conclusions on distribution but unfortunately when material is scanty and the areas involved very great, it can give only a very inadequate version of the real state of affairs, and it is for this reason largely, that supplementary evidence from aboriginal sources has been considered on a comparatively lavish scale.

In the few cases where material has been available in large series only the peripheral or other significant records are quoted. The distribution of most species will be discussed in greater detail and mapped in a series of comprehensive papers now in preparation. For reasons indicated in the third paper of this series (1958) the treatment is for the present mostly at species level only.

### 4. PREVIOUSLY PUBLISHED RECORDS.

These are incorporated in the general statements on distribution, usually without specifying the source, except where the species has not been seen personally. In such cases, the essential data from the original publication is reproduced for the sake of completeness of account.

## THE SUBDIVISION OF THE AREA

The term Central Australia has been used somewhat elastically to include not only the area within the political boundaries of the Federal Territory formerly so named, but also arid tracts of similar character adjoining it in the States of South Australia, Western Australia and Queensland, and there are necessary references also to the transition belt which separates the arid Centre from the well watered Torresian tracts to the north.

In the discussion of so large an area some subdivision is a convenience or even necessity. The excellent work of the Land Research Division of the C.S.I.R.O. will ultimately make this possible in terms of homogenous natural subregions but for the present purpose eight larger units are indicated, which though less uniform in character than these are wont to be and defined by more or less arbitrary boundaries, nevertheless show appreciable overall distinctness with some marginal overlapping.



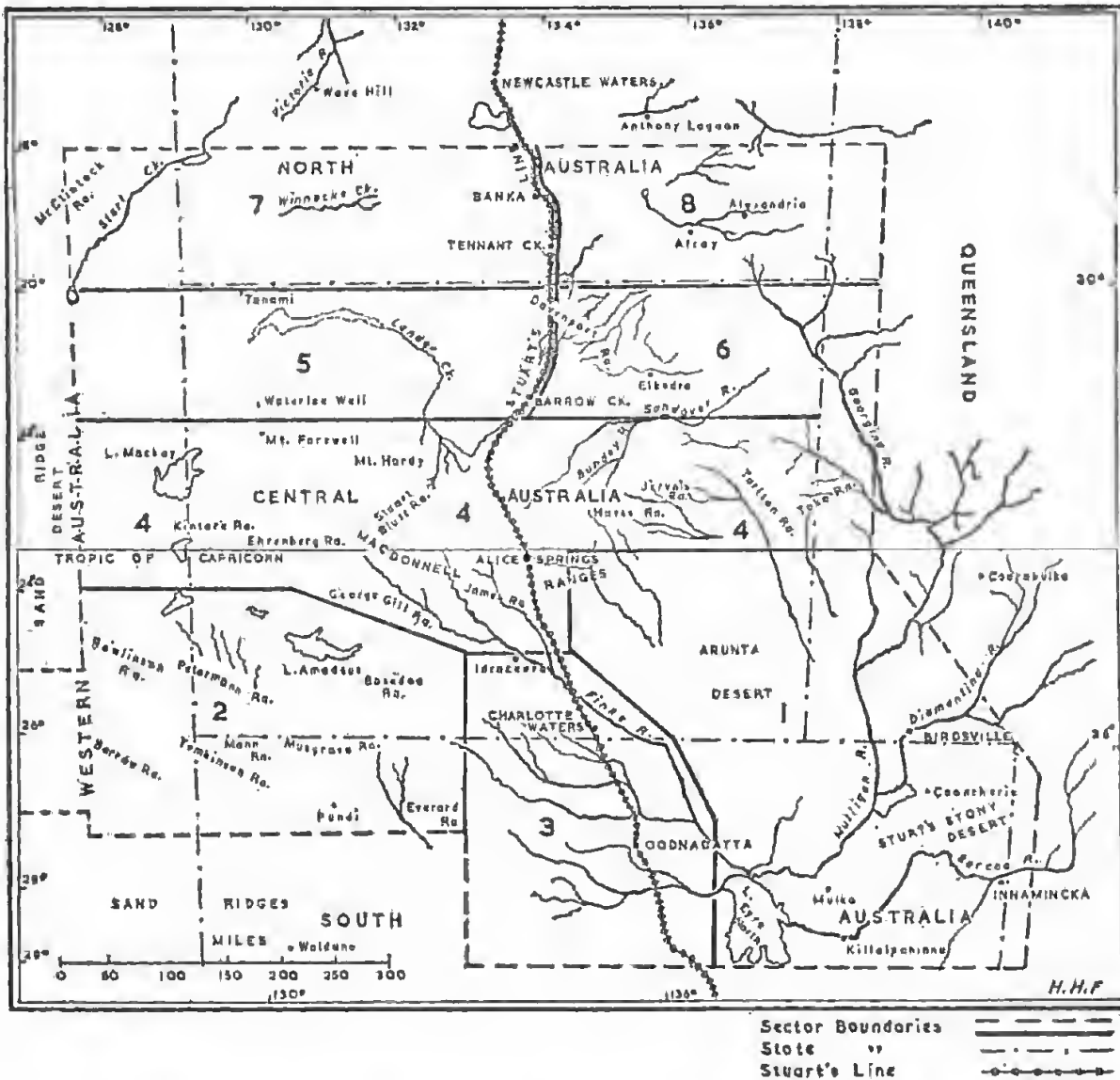


Fig. 1. Map of Central Australia and adjoining areas showing subdivision into eight sectors employed in text.

A useful primary division of the country may be had by reference to Stuart's Line, which lying on a general north-south axis undulates between the meridians of 133°-134° E. long. It marks the advance of J. McDouall Stuart to the north coast in his journeys of 1860-62 and is followed approximately by the Overland Telegraph and the Alice Springs-Port Darwin Highway. Especially in its northern portion the line divides the country into more or less distinct east and west moieties, the former being free from large sandridge areas, having generally firmer soils and more numerous and distinct drainage channels. This results in differences of vegetation, the most notable

of which is a partial replacement of *Triodia* (spinifex), which is almost ubiquitous in the lower lands of the western division, by grass communities such as Flinders and Mitchell grass, in the east. As a consequence, pastoral occupation and its aftermath, is more extensive and of longer standing, in the latter.

The eight sectors (fig. 1) may be briefly indicated in general terms as follows:—

#### 1. THE SOUTH-EASTERN SECTOR.

This includes (a) the eastern and northern portions of the Lake Eyre Basin in South Australia and the adjoining areas in south-west Queensland comprised in the drainage of the lower courses of the Barcoo River (Cooper Creek), and the Diamantina and Mulligan (Georgina) Rivers, and (b) the Arunta Desert.

It contains the lowest portion of the area mapped, some of it lying below sea level and its eremian features are more extreme than elsewhere. The rainfall is low and erratic, varying from 2 to 12in. per annum, but the eastern portion is periodically flooded by the overflow of rivers fed by remote catchments to the north-east. Large areas are occupied by sandridge and gibber deserts, where the vegetation is normally sparse and arboreal species largely suppressed.

This sector is markedly distinct from others, and some of its mammals are subspecifically differentiated, a pallid colouration being especially frequent.

Pastoral occupation is limited to the areas east of Lake Eyre and the Mulligan.

#### 2. THE SOUTH-WESTERN OR AMADEUS SECTOR.

The Amadeus Basin with the highlands to west and south of it across the three State boundaries and including the Rawlinson, Petermann, Tomkinson, Mann, Musgrave and Everard Ranges and those on the 26° parallel of S. lat. in Western Australia, as an extension. This sector is a complex of granite, gneiss and quartzite hills with intervening mulga parks and thickets and some minor sand-hill areas about the salt lake, and near its southern limit. Except for the Musgraves which rise to nearly 5,000ft. the hill systems are minor features and the creek channels which emerge from them are generally short lived. The long series of rangelets which extend deep into Western Australian territory on the 26th parallel are important from the point of view of distribution as they provide feasible lines of east-west diffusion for several species.

Pastoral occupation, chiefly with sheep, is limited to a small area in the north-east quarter and is not of long duration. The rest of the sector was originally part of the Aboriginal Reserve and is virgin country.

### 3. THE LARAPINTA SECTOR.

This is a South Central area lying between numbers 1 and 2 and including the lower drainage of the Finke and of the South Australian creeks which flow towards the west shore of Lake Eyre. It consists in large part of undulating gravelly plains, with areas of dense mulga thickets and frequent groups of residual tent-topped hills and eroded tablelands capped with desert sandstone. In the south the creek channels are lined with gidgee and myall (*Acacia* spp.) rather than with eucalypts. The whole area is pastorally held.

### 4. THE MACDONNELL SECTOR.

The ranges and enclosed plains from ca. 25° S. lat. (excluding those of sector 2) to 23° S. lat., including the Macdonnell Range system, the James, George Gill, Stuart Bluff, Reynolds, Jervois, and Tarlton, etc. A high, comparatively well watered and well vegetated tract, with peaks rising above 4,000ft. in the central portion. The arborescent plains vegetation is still largely acacia spp. but with an increasing element of eucalypt to the north. The lower, western portion merges with the Amadeus sector and the mulga (*Acacia aneura*) is the chief arborescent species there, but the eastern third is increasingly dominated by the very distinct gidgee (a complex of closely related species allied to *A. cambagei*) which forms characteristic uniform forests over hundreds of square miles towards the Queensland border.

Pastoral occupation involves the whole sector except for a small area near the western margin and in the central portion is of 80 years' duration.

### 5. THE LANDER SECTOR.

From the northern boundary of sector 4, to the former boundary of Central Australia and Northern Australia at 20° S. lat.; east to Stuart's line and west to the margins of the Great Sandridge Desert.

This is an area of general low relief with isolated hills and outcrops but no considerable ranges and with the single major drainage line of the Lander Creek as a central feature. Undulating plains of sandy loam are heavily scrubbed with mulga in the south-west, but

elsewhere are lateritic, with lower shrubs and a considerable stunted eucalypt element alternating with triodia communities.

There are some minor isolated sandridge areas. Only a small portion of the sector is pastorally occupied and stocking of most of this is light and recent.

#### 6. THE TRANS-SANDOVER SECTOR.

The area east of Stuart's Line in the same latitude as 5. The north-western quarter is occupied by a characteristic series of quartzite and sandstone ranges (the Murchison and Davenport) with a great development of spinifex covered screes and plains and some thickets of the local "turpentine" (*Acacia lysiphloia*). A characteristic relict plant in the hills is the desert paperbark (*Melaleuca lasiandra*)<sup>(1)</sup>. Elsewhere are spinifex plains with mixed eucalypt-acacia parks merging in the north-east corner with Mitchell grass plains of the Barkly type.

The eastern portions of this sector contain the only areas east of Stuart's Line (apart from the Arunta desert) which have not been occupied for pastoral purposes.

#### 7. THE NORTH-WEST SECTOR.

This is the western part of the lower transition zone between the Central and Northern Australian environments and extending from latitude 20° to 18° south; eastward to Stuart's Line and 100m. westward of the Western Australian border. The rainfall is higher (15-20in.) and there is an approach to a monsoonal climate, with increased summer humidity. The north-west angle includes some grass plain on Sturt Creek and the head of the Victoria River and along its eastern edge a belt of quartzite and sandstone rangelets and screes similar to the Murchison-Davenport area to the south.

The remainder is similar to the scrubby plains of the Lander sector but with a considerable increase in the eucalypts. The true mulga (*Acacia aneura*), the most characteristic of the Central Australian arborescent acacias, is now rare, its northern limit lying a little north of the 20th parallel of S. lat. in sectors 7 and 8. Pastoral occupation is confined to a relatively small area on the eastern boundary and in the north-west angle.

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(1) I am indebted to Mr. G. Chippendale of the Commonwealth Administration, Alice Springs, for the identification of these two plants.

### 8. THE NORTH-EAST OR BARKLY SECTOR.

The eastern half of the transition zone from Stuart's Line to 50m. east of the Queensland border. This consists largely of the so-called Barkly Tableland, characterised by treeless plains of black or ash grey soils with pure communities of Mitchell and Flinders grass, interspersed with islands of red soils carrying eucalypts and terminalias of northern facies, with triodia and under shrubs. The whole sector is occupied pastorally and portions of it have been stocked for 80 years.

## FACTORS INFLUENCING THE PRESENT STATUS OF SPECIES

What I have recently written (1957) of the mammals of Upper South Australia is equally true of the Centre; namely that the question of what is extinct and what is barely extant is often impossible to answer with conviction, and where material records are scanty or lacking one must necessarily fall back on general inference and the testimony of the natives, where it is forthcoming.

In order to avoid the wearisome repetition of the same facts and inferences, species by species, it may be well to summarize very briefly the chief factors which have operated and are operating, to bring about the marked decline in numbers and territory, which with one or two exceptions only, has been the fate of all the Central Australian mammals.

### 1. LONG TERM CLIMATIC CHANGES INVOLVING INCREASED ARIDITY AND ADVERSE VEGETATIVE CHANGES.

In many cases this has prevented the development of large uniformly distributed populations and substituted a discontinuous type of occupation in widely scattered groups or colonies. Provided that sufficient mobility is retained or developed and that numbers do not fall so low as to prevent adequate gene flow between groups, this is probably a valuable adaptive mechanism tending towards perpetuation of the species. But there is ample evidence that several species known to science and probably still others known only to aborigines, did not develop this mobility or in other ways lagged in adaptation to the changing post pluvial conditions, and these were drifting towards extinction long before any of the human agencies next considered, were operative.



Such species were *Phascogale calura*, *Ph. penicillata*, *Bettongia penicillata* and perhaps *Trichosurus vulpecula*, *Leporillus apicalis*, and *Macroderma gigas*.

## 2. ABORIGINAL HUNTING.

Aboriginal influence on the decline of the mammal fauna as a whole is probably a minor one and perhaps quite negligible, but it is not to be altogether discounted in the case of particular species. A good deal has been written and more implied about the possible effectiveness of some native food taboos, in conserving fauna. Whatever be the truth of that, it is clear that it only applies to the chief "game" species, and it seems probable that an active hunting population, even though in very small numbers, may have hurried along the exterminating process, in those cases where the range occupied by the animal was very restricted and its population thin.

Some of the hunting methods of the blacks, especially the "fire-trap" technique, in which large areas of vegetation are burnt out, must have borne very hard on non-burrowing species, like *Bettongia penicillata*.

## 3. EUROPEAN OCCUPATION AND PASTORAL EXPLOITATION OF THE COUNTRY.

This is no doubt a major cause of decline and perhaps the chief one. Although the total numbers of ungulate stock seem relatively small when compared with the area occupied, the constant movement to and from watering places causes a multiplication of a disturbing factor with which many native species, especially the surface nesting forms, cannot cope. It has constantly been observed on stocking virgin country, that many native species disappear long before any question arises of competition for food. In many cases no competition for food is involved at all and in the case of *M. rufus*, which from its grazing habit might *a priori* be expected to furnish an exception, one finds the greatest tolerance—kangaroos in large numbers coexisting with domestic stock about the same waters.

The red kangaroo (and to a lesser extent the hill kangaroo, *M. robustus*) is of special interest in this connection as furnishing the only example of a native species which may have been favourably influenced by pastoral operations (infra) and which in some districts has shown marked increase in numbers in spite of restrictive measures.

Pastoral occupation is of greater extent and longer duration east of Stuart's Line than west of it and this fact has to be borne in mind when considering present-day distribution—several species such as

*Isoodon auratus*, *Perameles eremiana*, *Bettongia lesueuri*, and *Lagorchestes hirsutus*, which are much better represented in the western division, may originally have been more uniformly distributed and may perhaps even have passed east of the Queensland border, where today they appear to fall short of it.

Active persecution by the white community is limited to two species—the red kangaroo and the dingo—and in neither case has survival, or even general numerical status, been seriously threatened as yet.

#### 4. INTRODUCED PESTS.

Here and there introduced ungulates have escaped and built up considerable feral populations in virgin territory which have had a deleterious effect on native fauna over small areas. Far more important, however, are the three major scourges, the rabbit, the fox, and the feral house cat, which together have had an effect in certain districts only to be described as catastrophic; the first by competition for food plants and the two latter by direct predation.

At present the fox and rabbit are chiefly concentrated in the southern sectors where a vain hope was entertained that the latter might buffer the effect of the fox on the native mammals. But in the last 25 years, the region comprised by the Everard, Musgrave, Mann and Tomkinson Ranges—one of the most beautiful hill tracts in arid Australia, largely unoccupied by white man and with many of the attributes of a natural sanctuary—has been stripped of most of its smaller species by the increase of the fox there. The work of the fox is often done with remarkable speed and it seems probable that the colonial type of distribution of so many marsupials, is particularly vulnerable to its attack—small groups being systematically hunted out of existence, before they have time to develop a protective mechanism.

The extent to which the fox succeeds in occupying the sectors further north is of vital concern in the future of Northern Territory mammals. Experience in Western Australia suggests that if left to itself it may eventually work right through to the north coast.

The feral domestic cat which is widely spread in Central Australia is also no doubt a destructive force of some magnitude here as elsewhere; but as it preceded the white man in the Centre by several decades at least, and the rabbit and the fox by a still greater interval, without producing comparable effect to the latter, it is presumably of less virulence.

5. EPIDEMIC DISEASES; POISONING THROUGH NATURAL AGENCIES; AND  
HEAT APOPLEXY.

These have all been observed to cause death in the larger macropods, but do not appear to act as major causes of loss in Central Australia.

SYSTEMATIC PRESENTATION OF THE DATA ON NAMES,  
DISTRIBUTION AND STATUS OF SPECIES

ORNITHODELPHIA

*Tachyglossus aculeatus* Shaw 1792

Wonkanooroo (*s. lato.*), *Inappa*, *Inniwallinga*; Pitjanjarra (*s. lato.*), *Tchilkamutta*, *Tchirilya*; Arunta, *Inarlinga* (widely used); Ilyowra, *Yunaba* (widely used); Warramunga, *Wajingurri* (*Wajinga*); Worgaia, *Nilliyiloo*; Tchingilli, *Keelyilli*, *Ngingulda*; Mudburra, *Yenodin*; Alowa, *Oolbulla*.

Ubiquitous and sometimes quite plentiful, especially in rocky hills; has one of the highest survival rates amongst Central mammals even in fox infested country.

Material examined is from the Musgrave Range in sector 2 and from the George Gill Range, Napperby Hills and Frazer River in sector 4.

On the former occurrence of *Ornithorhynchus* in Central Australia, the possibility of which has been canvassed from time to time, I have obtained no evidence in support.

DIDELPHIA

DASYURIDAE

*Dasyurus geoffroyi* Gould 1841

Wonkanooroo (*s. lato.*), *Yikowra*; Pitjanjarra, *Pulchida* (*Partjada*); Yankunjarra, *Keenika*; Kukatja, *Tajadi* (widely used); Arunta, Ilyowra, *Achilpa* (widely used); Warramunga, *Winnijungoo*.

Further north the following names are used primarily for *D. hallucatus* (infra): Tchingilli, *Jobodo*; Alowa, *Wanumbeera*; Mara, *Woonyaboonya*; Larrakia, *Luali*.

Formerly widely distributed and plentiful over a large part, or possibly over the whole of the central area, but now a rare and

apparently vanishing form. I have recent accounts of it surviving in sectors 4, 6, and 7, but it seems to have completely gone from the Everard-Musgrave Range area which yielded the only material examined. This indicates a small phase of *D. geoffroyi* with some modifications tending superficially towards *D. hallucatus* so that separation from that species by interrogation is uncertain, and it is possible that *D. hallucatus* infiltrates the transition zone of sectors 7 and 8. It is significant however that Glauert (1933) records *D. geoffroyi* in the Sandridge Desert about 50m. from the western boundary of sector 7.

Material examined is from Chundrinna and Walthajalkanna to the north of the Everard Range. Spencer had material from Alice Springs and Crown Point.

#### **Phascogale calura Gould 1844**

The inclusion of this species in the Central fauna still rests on the original record of Spencer of specimens taken by Gillen at Alice Springs in the Macdonnell Range in 1896. I have been unable to obtain any further satisfactory information upon its status, and it would appear to be a relict form confined to the range or at least with a very restricted distribution. If it still exists it must be excessively rare. One of the original specimens has been examined, as well as one from the Mount Lofty Range of lower South Australia.

The related species *P. penicillata* Shaw has a northern race *pirata* Thomas, originally based upon the South Alligator River in Arnhem Land, in a high rainfall area. Glauert, however (1933) records it from the Sandridge Desert of Western Australia at about lat. 21° 50' S. This corresponds to the south boundary of the Lander sector about 200m. east, and it may therefore extend into Central Australian territory.

#### **Phascogale (Pseudantechinus) macdonnellensis Spencer 1896**

Since the original series was taken at Alice Springs in the Macdonnell ranges, I have had it from the Basedow Range area in the Amadeus sector of the South-West in 1937 and again in 1939, and it was recorded also from the Granites south of Tanami in the Lander sector, in 1952. It is certainly not a common form at the present day but its true status is obscure.

Material examined comprises part of the original collection, the Basedow Range specimens and a long series from localities unfortunately not further specified than as from "Central Australia".<sup>(1)</sup>

The related form *Ph. (Pseudantechinus) mimulus* Thomas 1906 is apparently still represented solely by the type specimen from Alexandria in sector 8.

### **Phascogale (Planigale) ingrami** Thomas 1906

The original record of 5 specimens from Alexandria in sector 8, is apparently still the only one for this species, in the area here considered.

### **Dasyercus cristicauda** Krefft 1867

Wonkanooroo, *Mudagoora*; Pitjanjarra, *Muritcha*; Arunta, Ilyowra, *Ampurta*; Walpari, *Narlloodi*, *Tajinna*.

A widely distributed and formerly very plentiful species, with records in all the sectors except 8, but especially characteristic of the south Central areas. The northern limit is at about 19° S. lat. but in the adjoining tracts of Western Australia, Glauert (1933) records it from 18° S. lat.

It tends to concentrate upon sandridge areas and in 1931-32 after a period of scarcity was in large numbers about the lower Diamantina and Barcoo in the eastern part of the Lake Eyre Basin, and from 1932-35 was found to be one of the most plentiful small mammals in the Amadeus sector. At the present time it is almost unknown in the latter sector and is everywhere much reduced but has been obtained during the last five years from points as far apart as Yuendumu and the Tarlton Range.

Material examined is from the eastern part of the Lake Eyre Basin, where the very distinct pallid phase known as *D. c. hillieri* Thomas occurs; from sand areas adjoining the Everard, Musgrave, Mann, Tomkinson and Basedow Ranges in sector 2; from Yuendumu near the boundary of sectors 4 and 5; from the Tarlton Range in the far east of sector 4; from Tennant Creek in sector 7; and from the Canning Stock Route in the Sandridge Desert of Western Australia.

(1) Much early material examined by me is labelled baldly as from "Central Australia", which at the time seems to have been regarded as a sort of torrid Ultima Thule, neither capable of, nor needing, more detailed localization. This leads to an exasperating loss of many valuable records.



***Dasyuroides byrnei* Spencer 1896**

Wonkanooroo, *Kowari*.

The locus of the type series was Charlotte Waters in sector 3 and of the later subspecies *D. b. pallidior* Thomas 1906, Killalpaninna in sector 1. Formerly it had a considerable range in the eastern part of the Lake Eyre Basin and was well known to the blacks and many settlers by the above name, but I have been unable to trace it in other parts of the Centre, several reports of it being due to confusion with *Dasycerous*.

At the present time it is one of the rarest of the Dasyuridae, but retains a very tenuous hold on the eastern part of the Lake Eyre Basin, and has been taken recently at Birdsville.

Four specimens only have been examined and these are imperfectly localized, as from "Central Australia".

***Sminthopsis crassicaudata* Gould 1844**

Wonkanooroo, *Nilee*.

This species periodically undergoes great increase in the eastern part of the Lake Eyre Basin in sector 1, whence most of the material here examined has come. It represents the long legged, long tailed, pale coloured local phase, *S. c. centralis* Thomas 1902 which Tate (1947) proposes to separate from *crassicaudata* and treat as a subspecies of *S. macroura* now raised to specific rank. I have discussed in detail (1933) the evidence for regarding *crassicaudata* and *centralis* as subspecifically related, based on the examination of a large series from intermediate localities.

Elsewhere in the Centre it is less well known and is apparently not subject to great fluctuations in numbers.

Records are available from the Lake Eyre Basin in sector 1; Arkaringa in sector 3; Mentibee in sector 2; Macdonnell Ranges and the Bunday River drainage in the north-east of sector 4; Yuendumu in the north-west of sector 4; and Willowra in sector 5.

Material from all these points has been examined.

***Sminthopsis hirtipes* Thomas 1898**

The type was from Charlotte Waters in sector 3 and it has since been obtained in the Lake Mackay area in the far west of sector 4, and Glauert (1933) has recorded it from near the Warburton Range in the

western extension of sector 2 and at Well 29 on the Canning Stock Route of the Sandridge Desert. The latter specimens have been examined.

Nothing is known of its status.

### ***Sminthopsis larapinta* Spencer 1896**

Wonkanooroo, *Melatjhani*.

The type locality is at Charlotte Waters in sector 3, and it has been taken also in the eastern portion of the Lake Eyre Basin in sector 1 both in South Australia and Queensland; in the Macdonnell Ranges and between the Bunday and Frazer rivers in sector 4, and at Tanami in sector 5—the last record by Glauert (1933). It has latterly been considered that *S. stalkerii* of Alroy and Alexandria is a subspecies of *larapinta* and if this be so, it is likely that the distribution of *larapinta* covers most of Central Australia.

Like *S. crassicaudata centralis*, *S. larapinta* is periodically very plentiful in the eastern part of the Lake Eyre Basin, but is very sparse elsewhere.

Tate (1947, p. 123) states that I have questioned the distinctness of these two species. This however is very far from being the case, and in 1933 I listed the obvious points of distinction both external and cranial, which separate them.

Material examined is from the first four localities quoted.

### ***Sminthopsis murina constricta* Spencer 1896**

This somewhat cryptic form still rests I believe, on Spencer's original specimens from Oodnadatta in sector 3 and Alice Springs in sector 4.

### ***Sminthopsis psammophila* Spencer 1895**

The type which is still unique so far as published records go, is from the vicinity of Lake Amadeus in the south-west sector.

I append a number of aboriginal names for *Sminthopsis* like animals which are insufficiently characterized to be assigned to any of the above species with confidence: Yankunjarra, *Walbunba*; Arunta, *Munyooba*; Ilyowra, *Bunyilba*, *Annuljalu*; Walpari, *Kunnakulumbi*, *Tchungunba*; Tchingilli, *Yarrukaddi*; Mara, *Maloweea*.

***Antechinomys spenceri* Thomas 1906**

Yankunjarra, *Pitchi pitchi*; Arunta, Ilyowra, *Arrajanuta*.

Records are available from Oodnadatta and Charlotte Waters in sector 3; from the Everard, Mann and Musgrave Ranges and Wollara, in sector 2; from the Macdonnell Ranges, upper Sandover River, Bunday and Ooratipra Creeks, and the Tarlton Range in sector 4; and from Tennant Creek in sector 7.

Wood Jones (1923) wrote of its excessive rarity and this may be true of the Lake Eyre Basin and of the western district of South Australia, where he sought it, but from 1932-35 in the Everard and Musgrave Ranges and from 1953-56 in the eastern part of sector 4, I found it fairly plentiful—much more so than any of the *Sminthopsis* species, and in the latter period it was frequently being brought into homesteads at night by cats.

Material has been examined from all the above localities and a specimen also from the Murchison district of Western Australia, taken in 1928, 50 miles north of Meekatharra. This appears to be the most westerly record and is nearly 600 miles north-west of Rawlinna whence it is also claimed.

***Myrmecobius fasciatus* Waterhouse 1836**

Yankunjarra, *Wulpoorti* (*Wailburdi*).

Locality records are from the south and west of the Everard Range; south of the Cavanagh Range and north and west of the Rawlinson Range, all in sector 2 or its western extension.

In these localities it was formerly quite plentiful, but I know of no material having been taken since 1933 and as the fox has greatly increased in this sector since that time, its chances of survival are not good.

Material examined is all from the Everard Range district. The local form is *M. f. rufus* Wood Jones 1923.

## PERAMELIDAE

***Thalacomys lagotis* Reid 1837**

Wonkanooroo, *Thulka*; Dieri, *Kapita*; Pitjanjarra (*s. lato.*), *Talgoo* (*Djalku*) (widely used), *Ngynoo*; Arunta, Ilyowra, *Anunga*, *Ayoorta*; Walpari, *Yarninga*; Warramunga, Wombaia, *Warrigiddi*; Tchingilli, *Yalbo urru*.

Formerly one of the most plentiful and universally distributed of Central Australian mammals, with a heavy concentration of population in the south-west sector and central portions of sector 4. Locality records cover all sectors except 8 where the Barkly Tableland was apparently never occupied. The species formerly extended much further north than is generally realized and there is good evidence of it 30 years ago at Lulwa about 50 miles north of Newcastle Waters.

At the present time it is rapidly being reduced to the status of a rare form and has been completely eliminated from much of the south-west sector in the last 25 years, by the fox. It still occurs in small numbers in the ranges of the 26th parallel in Western Australian territory; in the Western Macdonnells; in the Lake Eyre Basin; and at one or two points in sectors 6 and 7.

The greater part of the material examined is from the south-west sector, but material from peripheral localities includes (1) Pundi in the sandhill belt south of the Musgrave Range; (2) Blackstone and Warburton Ranges on the 26th parallel in Western Australia; (3) Sturt Creek in the north-west; (4) Tennant Creek in the north centre; (5) Frazer River in the east of sector 4; (6) Cooncheri and Birdsville in the south-east of sector 1.

#### ***Thalacomys minor* Spencer 1897**

Wonkanooroo, *Yallara*; Urabunna, *Urpila* (*vide* Stirling and Spencer).

The species is known from two districts only, the original form as described by Spencer coming from near Charlotte Waters in sector 3, and a subspecies *T. m. miselius* described in 1932, from Cooncheri, Mungeranie and Kopperamanna on the lower Diamantina and Barcoo in sector 1.

From the type locality in sector 3 the species seems to have completely disappeared and I know of no records of it since 1904. The subspecies *miselius* probably still persists in the Lake Eyre Basin in vanishingly small numbers.

The material examined comes from all four of the above localities, but much more plentifully from sector 1.

It has been debated whether the eastern form *T. m. miselius* may not be identical with the earlier described form *T. leucura* Thomas 1887 which is known only by a single immature and unlocalized specimen. Tate (1948) who alone has examined the types of both

*leucura* and *miselius* dissents from this, so that there are no grounds at present for claiming the former as a Central Australian species, though it may well have been so.

### ***Isoodon auratus* Ramsay 1887**

Pitjanjarra (*s. lato*), *Wintarro*, *Nyurloo*.

These two names are well differentiated from *Perameles eremiana* by natives who knew both animals as living sympatric species. Those which follow may apply to either:—

Nadadjara, *Makoora*; Kukatja, *Poodoojooroo*; Ilyowra, *Yiwurra*, *Taich*; Arunta, *Yiwurra*, *Arkoora*; Walpari, Warramunga, *Bukquroo*; Mudburra, *Bukquroo*, *Myarin*; Tehingilli, *Butgoola*, *Kulwarri*.

There is no doubt that *I. auratus* was formerly a very widely distributed form in Central Australia, wherever sandy spinifex tracts occurred in considerable expanse, as is particularly so west of Stuart's Line. Where material is not available, however, it is often impossible to be sure from the accounts of natives whether this species, or *Perameles eremiana* or both are being indicated. In districts such as the south-west sector in the period 1932-35 where the two occurred sympatrically there was no confusion in nomenclature, but in the pastoral districts east of the line, where bandicoots of either kind had not been seen for thirty years or more, names were used less precisely. All that can now be said is that one or other of these two species, and frequently both, probably occurred in suitable habitats over the whole of Central Australia.

*I. auratus* survives in considerable numbers in the western part of sector 4; the adjoining part of sector 2 and in sectors 5, 6 and 7. In the more southerly districts it is rare or absent. Its reduction in the southern part of the south-west sector has been very steep in the last 25 years.

The material examined comes from the lower Barcoo River in sector 1; from Pundi and Koonapandi south of the Musgrave Range and from the Everard Range in sector 2; from Lake Mackay in sector 4; from the Granites south-east of Tanami in sector 6; from several points on the Canning Stock Route in the latitude of sectors 4, 5 and 7 but further west in the Sandridge Desert; and from Tennant Creek in sector 7.

The "*Perameles obesula*" recorded by B. Spencer (1896) from the Burt Plain and Tennant Creek is no doubt to be referred here—*I. obesulus* and *I. auratus* are closely, perhaps subspecifically, related.



**Perameles eremiana** Spencer 1897

Pitjanjarra (*s. lato*), *Wallilya*, *Nginana* (*et vide supra*).

Spencer's original material upon which the species was founded came from north-east of Charlotte Waters in sector 3 and from the Burt Plain in sector 4. Other records are available from south of the Musgrave and Mann Ranges, and north of the Rawlinson Range in sector 2; from the Warburton Range area, west of this (Glauert 1933); and from near the Granites below Tanami in sector 5. Although no definite records are available east of Stuart's Line, some material collected by Winnecke, which has been examined, should probably be so placed, and it is almost certain that some of the native names of mixed application, which are listed above with *I. auratus*, relates to *P. eremiana*. Possibly a former sympatric occurrence of the two species over the greater part of Central Anstralia, would be a justifiable inference.

In 1932-35 it was a well known and fairly plentiful species in the south-west sector, though less numerous than *I. auratus*, but is now absent or rare in this fox infested quarter. It still persists in sectors 5 and 7.

Material examined comes from south of the Musgrave and Mann Ranges and from unspecified localities in "Central Anstralia".

Sanger (1882) records "*Perameles fasciatus*", from the lower Barcoo River in sector 1, but the interpretation of this is doubtful. I have not been able to gather any good evidence of the presence of any of the banded bandicoots in the areas here dealt with.

**Choeropus ecaudatus** Ogilby 1838

Pitjanjarra (*s. lato*), *Kunjilba*.

Locality records exist for the lower Barcoo in sector 1; from south of the Musgrave Ranges in sector 2; from Charlotte Waters in sector 3; from Ryan Well in sector 4; and from Barrow Creek in sector 5.

If the animal still exists it must now be excessively rare. It is possible that some references to it are entangled in the incompletely specified names given under *I. auratus* and *P. eremiana*, as its habits are quite similar to those of the latter, but the only clear account of it which I have had in personal interviews was from elderly Pitjanjarra men in the Musgraves. They distinguished it satisfactorily

from Wallilya by the longer ear and the peculiarities of its manus and pes. They had not seen it since about 1926 and spoke of it in general terms as a southern form.

Of the four specimens examined only two are definitely localized in Central Australia and these are from Ryan Well and the lower Barcoo respectively.

### ***Notoryctes typhlops* Stirling 1889**

Pitjanjarra (*s. lato*), *Eecharricharri* (*Itjaritjara*); South Arunta, Urabunna, *Oorquamata* (Stirling); Walpari, *Mundawuljiwulji*.

The species is recorded from the Basedow range area, from east of Mount Conner, and south of the Mann, Musgrave and Everard ranges in sector 2; from Charlotte Waters, Idracowra and Crown Point in sector 3; from south of the George Gill Range, Hermannsburg and Arltunga in sector 4; from the Wauchope area south-west of Tennant Creek in sector 5; and from the Sturt Creek in sector 7.

The centre of distribution in the latitudes here considered seems definitely to be in the south-central and south-western districts of sectors 2 and 3; the bulk of the material and most of the records, originating there. Elsewhere, over large areas, especially east of Stuart's Line there seems to be no aboriginal knowledge of it at all. In 1931 I found that keen Wonkanooroo hunters who had spent 40 years between the lower Diamantina and Barcoo and the southern portion of the Arunta Desert knew nothing of it, nor did their women, but Johnston (1943) gives some credence to a report that an animal called Kakoma (by the ? Wonkadjura) in south-west Queensland may be this species. The Arltunga record is based on statements of R. T. Maurice (1903) who knew the animal well in the south-west sector and in lower South Australia and the Wauchope report I obtained from a group of Walpari in 1954 who recognized and named the animal from a skin.

At the present time it persists in some numbers in sectors 2 and 3, but elsewhere, if present, must be a very rare form.

Much of the material examined is only vaguely localized as from "Central Australia", though there is contributory evidence that this meant sectors 2 or 3. Of the records quoted above all are supported by material, except that from Arltunga and Wauchope.

## PHALANGERIDAE

**Trichosurus vulpecula** Kerr 1792

Pitjanjarra (*s. lato*), *Wyoota* (very widely used), *Mungawyuroo*; Arunta, *Andunya*; Ilyowra, *Undinna*; Walpari, *Tchungba*; Warramunga, *Marrabun*; (?)Worgaia, *Wamburra*; Wombaia, *Gowngar*; Mudburra, *Junganar*; Tehingilli, *Takooladji*; Mara, *Kudjani*.

This ubiquitous animal is notable in the Central Australian fauna, as being the solitary representative of a family, elsewhere often rich in species. The locality records involve all sectors, but there are large areas in the Barkly Tableland, Lander basin, and the north-west sector, which it may never have colonized.

Formerly it was an extremely abundant animal over wide areas, and as late as 30 years ago, one of the chief food species of the natives in some districts, but now suffering a decline which in most parts has reduced it to the status of a rare form. In the field work of 1932-35 it was found to be very plentiful and easily obtained in the south-west sector, where a portion of its population was living a semi-terrestrial life and sheltering in tchungoo and rabbit warrens. This innovation has probably been terminated by the increase of the fox, but it still persists in widely separated "pockets". I have recent reports of it in the Blackstone Range in the western extension of sector 2, and in the Central Macdonnell Ranges, and Arthur and Plenty Creeks in sector 4.

The collapse of its population, especially in sector 4 where there is a great development of eucalypt avenue woods along the streams and the fox is not a serious menace, is difficult to account for. In spite of its apparent success in occupying large areas of country, it may be that a long term climatic factor has been slowly telling against it.

The material examined is from the lower Barcoo in sector 1; from numerous points north and south of the Musgrave Ranges, south of the Mann Range, Everard Range area, and Wollara in sector 2 and west of that in the Warburton Range; from the Lake Mackay area of sector 4, and from west of sector 5 at Well 43 in the Sandridge Desert.

PHASCOLOMYIDAE<sup>(1)</sup>

There appears to be no worthwhile evidence, aboriginal or otherwise, of the occurrence of any member of this family as a recent

(1) *Post Scriptum*:

In preparing the above note, I had overlooked the fact that in correspondence with the late Dr. Macgillivray, of Broken Hill, he had informed me that wombats still survived in small numbers in the Paroo River and Tibooburra districts of New South Wales, as late as 1923.

species, within the area here treated of, but a passing reference to it is called for by reason of the local reports which have been made from time to time, of wombat burrows about the main ranges of sector 4. These are probably based on old tehungoo warrens, with the holes enlarged by weathering and coalescence.

The most northerly extension of the family is given by *Lasiorhinus latifrons* which, as a recent species in South Australia, reaches only to ca. 31° S. lat. and about 600 miles south of Alice Springs. In Queensland, however, the relict population which has been named *L. latifrons barnardi* Longman occurs in about the same latitude as the Macdonnell Range, at a point some 900 miles east of the same town.

## MACROPODIDAE

### **Macropus rufus** Desmarest 1822

Dieri, *Tchukooroo*; Wonkanooroo, *Koongarra*; Pitjanjarra, *Marloo* (*Merloo*) (very widely used); *Arunta*, *Okirra* (Stirling); Ilyowra (south) *O urra*; Ilyowra (north) and ? Worgaia, *Alarra*; Walpari, Warramunga, Tchingilli and Wombaia, *Yow wirri* (very widely used); Mudburra, *Wangurra*.

Locality records for the red kangaroo cover all eight sectors and it extends far beyond the boundaries of the area here considered, to the south, west and east, and considerably beyond the northern boundary.

In the last two decades the density of its population has undergone an enormous increase in the central parts of sector 4, which is sometimes attributed to the artificial proliferation of surface waters, through pastoral agency. Whatever its cause it should be noted that the increase has merely accentuated a natural distribution pattern, shared by several other species, which are not influenced by this factor. Within a south-central area of about 20,000 square miles which lies to the north of the main mass of the Macdonnell Ranges, it is safe to assume that several millions have been killed since 1945.

Its numbers fall away very steeply to the east, west and north of this area, and somewhat less so to the south. Normally it is absent from the major sandridge areas and from the larger expanses of spinifex flats, but its phenomenal mobility enables it to exploit all types of country when favourable changes in the vegetation occur.

The material examined is copious, the peripheral localities represented being: to the west, the Warburton Range; to the south-east, Tcherrikooninyee, west of Sturt's Stony Desert between the

Diamantina and Barcoo Rivers; to the east, Pituri Creek on the Queensland border of sector 4; north, Banka Banka in sector 7; and north-east, Alexandria on the Barkly Tableland.

**Macropus robustus** Gould 1842 vars.

Pitjanjarra (*s. lato*), *Kunula* (*Kunala*) (very widely used); Arunta, Ilyowra (south), *Arrunga*; Ilyowra (north) and ? Worgaia, *Areenin*; Warramunga, *Maradjee*; Tchingilli, *Watabunmurra*; Mudburra, *Joodama*; Mara, *Kirimbu*.

Phases of this species are almost as widely spread in Central Australia as *M. rufus*, and its extension beyond its borders even greater, reaching almost to the coast in the north and east. It occurs wherever the elected habitats of rocky ranges—often of very insignificant dimensions—are to be found, but has probably always been absent from sector 1, and at the present time is virtually so from sector 3.

In the last 60 years the euro has undergone marked recessions in some parts of the country, particularly in the eastern third of sector 4 and in the southern tablelands of sector 3, but in all the major hill systems it maintains large populations, some of which, in the Macdonnell Ranges, have shown an increase parallel with that of *M. rufus*, though on a less spectacular scale.

Much material has been examined, the marginal collections coming from the Everard Range in the south; Cockatoo Creek in the north-west; Banka Banka and Newcastle Waters in the north and the Tarlton Range in the east.

During the course of this work, some skulls of the very distinct species *M. antilopinus* Gould have been examined, which are attributed to Banka Banka in sector 7, which is about 200 miles south of its normal range and in anomalous conditions. The same collection has skulls of *M. rufus* labelled as from the Adelaide River, which is an equally anomalous record in the opposite direction. As I have been unable to confirm either of these apparent extensions of range by my own field work, I am assuming, pending further evidence, that the localities of these skulls have been transposed.

**Petrogale lateralis** Gould 1842

Pitjanjarra (*s. lato*), *Warroo* (very widely used); Arunta, *Arrawa*; Ilyowra (south), *Arrawa*, *Kulara*; Ilyowra (north) and ? Worgaia, *Rancee*; Walpari, Warramunga, *Wagularri*.



The major distribution of this rock wallaby is in Western Australia, whence it overlaps the Centre to about the Queensland border in sector 4. The north limit is at about 20° S. lat. just below Tennant Creek in sector 7, and in the south it extends to the limit of the belt of granite peaks south of the Musgrave Range at about 27° 30' S. lat.

The distribution pattern is somewhat similar to that of *M. robustus*, but is less extensive and more discontinuous—many ranges and rangelets either having no colonies at all or being occupied only intermittently with long periods of vacancy between. Its chief populations are in sectors 2 and 4; it is absent from sector 1 and there are no records for the greater part of sectors 7 and 8.

Its numerical status at the present time is much reduced from what formerly obtained, but whether it is precarious or not is difficult to determine, owing in part to its normally migratory and incomplete occupation of the country. In 1932-35 it was one of the commonest mammals of the south-west sector with swarming populations in many of the rocky outliers of the main ranges. Today, although it still persists at scattered points there, it is a comparatively rare form. In sectors 4 and 6 it is currently reported in small numbers from several widely separated localities in the Maedonnell Range, the Davenport Range, and the drainage of the Sandover and Bunday Rivers. Oddly enough it persists in some numbers on Chewings Ridge on the outskirts of the town of Alice Springs, where it now has to contend with the tourist and pea rifle.

A long series of specimens has been examined, and the outlying localities represented are; Barrow Range and Everard Range in sector 2; Cockatoo Creek on the boundary of sectors 4 and 5, and between the Sandover and Frazer Rivers in sector 4, east of Stuart's Line.

There is at present no satisfactory evidence of any other species of *Petrogale* in Central Australia. Tate (1952) records a form of *P. inornata* from the Mount Isa district of west Queensland and it is possible that this diffuses across the border into the eastern areas of sectors 4 and 6, from which very little material has been examined.

The nearest colonies of *P. xanthopus* in South Australia and Queensland lie far to the south and east, with no overlap with the central *lateralis*.

**Onychogale lunata** Gould 1841

Pitjanjarra (*s. lato*), Towala (*Towalpa*), Unkulda; Arunta, Yiwutta.

Another predominantly Western Australian species with an overlap in Central Australia, but less extensive than that of *P. lateralis*. The locality records listed involve sectors 1, 2, 3 and 4 only, with a northerly limit at about 23° S. lat.; sector 1, Lower Barcoo Creek; sector 2, Everard Range, Officer Creek, south of Musgrave, Mann, Tomkinson and Basedow Ranges; west extension of sector 2 in the Cavenagh and other ranges on the 26° parallel; Macumba Creek area of sector 3; and in sector 4, north of Ehrenburg Range, Red Bank, Bond Springs, Alice Springs, Huckitta and west of Tarlton Range; the two last, east of Stuart's Line.

At the present time this is one of the rarest of Central Australian macropods, but is still extant in sectors 2 and 4 at least and one was killed between the Tarlton and Jervois Range as late as 1956. In 1932-35 it was still being reported and occasionally obtained by natives in the south-west sector, but I have personal knowledge of only two specimens taken in that period.

Material examined is scanty, and comes from the Everard Range; between the Everard and Musgrave Ranges; the Cavenagh Range and Bond Springs.

**Onychogale unguifera** Gould 1841

Mudburra, Tchingilli, Warramunga, *Tchunma* (very widely known); (*Wakunja*, *Wagunyamenzi*; descriptive nicknames of the same peoples).

A north Australian species extending east from the coast of the Kimberley Division in Western Australia to the Pacific coast of Cape York Peninsula in Queensland, and diffusing south to about 20° S. lat. in the area here considered. There are records in sector 7 from Banka Banka, and the lower course of Sturt Creek.

It is not in large numbers on this southern fringe of its distribution, but is well known in several districts there.

Material examined is from north of Banka Banka and beyond.

**Lagorchestes conspicillatus** Gould 1842

Kukatja, *Oqualpi*; Arunta, Ilyowra, *Qualba*; Warramunga, *Nadama*; Tchingilli, *Kalama*; Mudburra, *Wambanna*.

This also is essentially a North Australian species with an east-west range similar to that of *O. unguifera* but it extends further south,

viz., to approx. 24° S. lat. and probably formerly occupied all the area to the north of that parallel. I have no records for sector 5 but as it occurs to north and south of that block, this is probably not significant. In sector 8 the the only records are at the western end and it may have been absent from the Barkly Tableland as so many other species were.

The locality records are: sector 4, many points in and about the western Macdonnells, including the Mareeni Plain; south of Mount Sonder; the Oqualpi Plain near Mount Razorback (a famous haunt in earlier years); west of Mount Heughlin; Haasts Bluff; and further north, west of the Napperby Hills and the Warburton Creek. To the east of Stuart's Line, between the Bunday and Frazer Rivers, Lucy Creek, Huckitta and west of the Tarlton Range; sector 6, Argadargada on the Sandover River, the Elkedra River area and east of the Davenport Range; and in sector 7, Banka Banka.

Though in very small numbers, this beautiful hare wallaby is well known to the natives as a living species over wide areas and today it has a much stronger hold on the country than *L. hirsutus*, and its long persistence in the cattle country of sector 4 augurs well for its future in the Centre. There are recent sight records of it from several of the above localities.

Central Australian material examined comes from the Mareeni Plain and between the Frazer and Bunday Rivers.

The local form conforms in a general way to *L. c. leichardti* Gould.

#### ***Lagorchestes hirsutus* Gould 1844**

Pitjanjarra, *Marla* (*Maala*) (very widely used); Ilyowra, *Adnungwa*; Walpari, *Deelanda*.

The headquarters of this species are in the great spinifex deserts to the west of the area here considered and the Central Australian population may be considered as an overlap from that region. The records involve sectors 2 and 4 at many points, but there are no satisfactory records from 1 and 3 and few from the northern areas in 5, 6, 7 and 8. A former sparse occurrence in 5, 6 and 7 is probable, though aboriginal knowledge of it is much less developed there than in the south-west. It is not known with certainty whether it reached the Queensland border, and its southern limit in South Australian territory was never determined and is now indeterminable.

The locality records are as follows:—Sector 2: south of the Cavenagh Range; south-west of the Barrow Range; Koonapandi and

Pundi, south of the Musgrave Range; between the Everard and Musgrave Ranges; north of Sladden Waters between the Rawlinson Range and the Robert Range; Docker Creek and Mount Jenkins, north and south respectively of the Petermann Range; north of Lake Amadeus; between Mount Conner and Murrachurra. Sector 4: Wytookarri (N.W. of Lake Amadeus); Dare's Plain in the George Gill Range area; near Lake Mackay; McEwin Hill; Mount Doreen; west of Warburton Creek and north of the Sandover River about 40 miles upstream from the Bunday junction. Sector 5: between the Lander and Davenport Ranges. Sector 6: west of Banka.

The species has been encountered on the Canning Stock Route further west, between wells 28 and 43, in the latitudes of sectors 2, 4, 5 and 7 of the present area.

The mode of occurrence of this hare wallaby is fluctuating and discontinuous and with isolated colonies widely sundered—circumstances which always add to the difficulties of estimating status. But there seems no doubt that a major collapse in its numbers in the south-west has occurred in the last 25 years.

In 1956 the testimony of natives who still hunt yearly in the sand tracts south of the Musgrave, Mann and Tomkinson Ranges (where it was one of their chief food supplies in 1932-35), was that it was "finished". It is certainly a comparatively rare animal in any part of Central Australia today, and in the districts where it lives sympatrically with *L. conspicillatus*, is much scarcer than that species.

Material has been examined from most of the localities quoted above, and the marginal specimens are from the Canning Stock Route in the Sand Ridge Desert of Western Australia; Barrow Range; Lake Mackay and Pundi, 50 miles south-west of Koonapandi in the Musgrave Range.

#### **Lagorchestes asomatus** Finlayson 1943

Knowledge of this species is still confined to the holotype skull, which came from the Lake Mackay area of sector 4.

#### **Bettongia penicillata** Gray 1837

Pitjanjarra, *Karpitchi*; Ilyowra, *Indwarritcha*; Worgaia, *Windijarra*; Warramunga, Walpari, *Yelkamin*.

There are records in sector 2, from Pundi, 50 miles south of the Musgrave Range; Mount Harriett between Pundi and the Range; at



Waldana Spring, 100 miles south of Pundi; Unyaba Hill, between the Everard and Musgrave Range; and near Mount Conner. In sector 4 at Huckitta and in the Lake Mackay area; on the Rankin Creek and east of Davenport Hills in sector 6 and near the Buchanan Creek in sector 8.

This bettong, formerly considered absent from Central Australia, was still extant in very small numbers on both sides of the South Australian-Central Australian border in sector 2 in 1932-35, where specimens were obtained by the blacks, and in the Lake Mackay area of sector 4. Elsewhere its presence as an excessively rare or recently extinct species rests on aboriginal testimony. It has now almost certainly been eliminated from sector 2, but may survive as a very attenuated remnant in some of the more northerly localities quoted.

Material examined is limited to two specimens, one from Waldana south of sector 2 and one from the Lake Mackay area of sector 4; the latter has been recognized provisionally on cranial characters alone as a new race, *B. p. anhydra* 1958, but may prove to be a full species when more completely known.

#### ***Bettongia lesueuri* Quoy and Gaimard 1824**

Wonkanooroo, Dieri, *Kanunka*; Pitjanjarra (*s. lato*), *Tchungoo* (very widely used), *Meetika*; Arunta, *Tnunka*; Ilyowra, *Alutta* (very widely used).

A species widely distributed over south-western Australia generally, the area occupied being probably greatest in Western Australia, but covering almost the whole of the State of South Australia and with a south-eastern extension in New South Wales and Victoria (1958, *op cit* fig. 1). The central overlap is wide, with a northern limit at about 20° S. lat. It is uncertain whether it enters Queensland territory, but certainly reaches to within 50 miles of it.

The locality records involve sectors 1 to 6 inclusive, but it was rare or absent in most of sector 1 and its heaviest concentrations were in sectors 2 and 4.

This burrowing bettong, unique in the Macropodidae for its fossorial habit, and often proclaiming its presence by the great warrens it excavates, was formerly exceedingly plentiful, and (subject to much local fluctuation) almost universally distributed in sectors 2 and 4, where it was one of the most important of aboriginal accessory food sources. It has now been almost eliminated from the south-western sector and



persists only as a rare form in scattered localities in the drainage of the Sandover and Plenty Rivers and in the north-west of sector 6.

The material examined has come entirely from the south-west sector, the chief localities represented being: Chundrinna and Walthajalkanna about 12 and 5 miles north of the Everard Range respectively; several points south of the Musgrave Range in about the same latitude; Allarinna on the north front of the same range; 20 miles east of Mount Conner; 12 miles south-west of King's Creek on the south side of the George Gill Range, and 5 miles north of Desolation Glen in the Rawlinson Range.

### **Caloprymnus campestris** Gould 1843

Dieri, *Wirtiree*; Yowroroka, *Koorjee*; Yalliyanda, Wonkanooroo, *Oolacunta*.

The known distribution of this animal as a recent species is in a portion of the eastern part of the Lake Eyre Basin in sector 1, between Coorabulka in Queensland and Mulka in South Australia and east to Innamincka.

Within this area it occurs in very small numbers but is subject to occasional increase as in 1931. I know of no reliable records since 1935.

Material examined comes from Ooroowillani, Mulka and Cooncheri.

## **MONODELPHIA**

### **MURIDAE**

Except in the case of species of strongly marked characters, the data on individual murids, especially from aboriginal sources is generally less than that for marsupials, and where material also has been scanty, I have not felt justified in speculating on status and distribution, but simply record the localities represented.

### **Rattus villosissimus** Waite 1897

Wonkanooroo, *Miaroo*; Anmatchera, *Artoka*<sup>(1)</sup>; Warramunga, Walpari, *Gootanga* (very widely used); East Arunta, Ilyowra, *Yimala*.

Locality records are from east of Banka, and from Alroy and Alexandria in sector 8; Lake Nash, Wycliffe Well, Elkedra in sector 6;

(1) The same, or a very similar word may be used for a frog which also burrows into creek banks.

Bundey River area, Tarlton Range, Pituri Creek, Napperby Creek in sector 4; Appamunna, Cooncheri, Puttaburra, and Mulka in sector 1.

This is an eastern form with headquarters as a breeding species, in Western Queensland. At intervals of from five to seven years its populations undergo a cyclic increase and it swarms into the adjoining parts of eastern Central Australia occasionally reaching Stuart's Line or slightly beyond. These migratory populations vanish again, usually quite quickly but sometimes persist for as much as 18 months. In the eastern part of the Lake Eyre Basin in sector 1, it is a resident species though normally present in very small numbers, and there is a possibility that the Napperby Creek population south of Stuart's Bluff Range, and perhaps others in the Macdonnells are of the same kind, though it is more likely that they are rather persistent remnants of migration waves.

The material personally examined comes from all four of the sector 1 localities and from all three of those in sector 4, and from unspecified localities in "Central Australia".

#### ***Rattus tunneyi* Thomas 1904**

The subspecies *R. t. dispar* Brazenor 1936 is known from the Alice Springs district in sector 4 and from Tennant Creek on Stuart's Line between sector 7 and 8 and evidently once had a considerable north-south range.

No new material nor data on the status of this species has been obtained during the course of this work.

Material personally examined comes from both the abovenamed places and specimens labelled "Central Australia" have also been seen.

The above two species which are numerically insignificant in "normal" times are apparently the only representatives of the genus in the area.

#### ***Pseudomys (Pseudomys) minnie* Troughton 1932**

Wonkanooroo, *Pallyoora*.

Recorded from Appamunna, Cooncheri, Mulka, Ooroowillani, Innamincka, Cordillo and other points in the eastern portion of the Lake Eyre Basin in sector 1; at Stuart Creek just south of this sector and at Arekaringa in sector 3.

Known to settlers as the River Rat, from its occasional prevalence along the course of the Diamantina and Barcoo channels, it is normally

in small numbers but subject to local increase which, however, does not seem to carry it into the more northerly or westerly sectors. A southeasterly form not characteristic of the Centre as a whole.

Material examined from all the above localities and from Ooldea, south of sector 3.

#### ***Pseudomys* (?*Pseudomys*) *fieldi* Waite 1896**

This very obscure species is, I believe, still known only by the original specimen obtained by the Horn Expedition at or near Alice Springs in sector 4. It has been variously ascribed by different authors to *Laggadina*, and *Thetomys* as well as *Pseudomys* ss.

#### ***Pseudomys* (*Thetomys*) *nanus* Gould 1858**

Pitjanjarra, *Entroota*.

The locality records are Koonapandi and Mount Crombie, south of the Musgrave Range in sector 2; near Alice Springs in sector 4; Barrow Creek and Wycliffe Creek on Stuart's Line between sectors 5 and 6.

Material from all these localities has been examined as well as some labelled "Central Australia" only.

This rat has been variously relegated to "*Mastacomys* sp.", to "*Mus*" *nanus* Gould, and to *Gyomys desertor* Troughton. I have redescribed it fully (1941) and shown that inclusion in *Gyomys* is contra indicated by its cranial characters. Tate (1951) after re-examining the type of *Mus nanus* Gould, dissents from the above identification, but I adhere to it until the matter can be tested by direct comparison. Tate finds the interval of 1,000 miles separating the type locality of *Mus nanus* Gould from that of the above material, good reason for not merging them. It must be recalled, therefore, that a greater distance separates the type locality of *Gyomys desertor* at Wycliffe Creek from that of Victorian specimens taken on the Murray.

#### ***Pseudomys* (*Leggadina*) *forresti* Thomas 1906**

The type locality is at Alexandria in sector 8, and a single specimen from Mulka in sector 1 has also been referred to it. Nothing is known as to its status except that it is certainly not plentiful.

***Pseudomys (Leggadina) hermannsburgensis* Waite 1896**

Pitjanjarra, *Menki*.

Locality records are, in sector 2; Wollara, near the Basedow Range; Ayer's Rock; Alpera at the north-west spur of the Musgrave Ranges; Eriwunyawunya, Owellinna, and Ernabella on the south side of the same; Chundrinna on the north side and Karmeena on the south side of the Everard Range; sector 3; Charlotte Waters: sector 4; Hermannsburg; "Macdonnell Ranges"; and Teatree Well: sector 5; Barrow Creek and the Granites: sector 7-8; Tennant Creek on Stuart's Line; and in sector 8 at Alexandria.

Although formerly having a wide distribution outside the central areas and said to have occurred as late as 1857 at the junction of the Murray and Darling Rivers in Victoria, in western New South Wales, south-western Queensland, western and south-western South Australia and south-eastern West Australia, this species is today a characteristically Central Australian form, and provides a curious inversion of the usual regional status of such widely spread mammals. In central latitudes its chief concentration is in the south-west and though it has been recorded from Alexandria in the opposite sector, I could find little aboriginal knowledge of it in many of the intermediate districts in 1950-56.

In 1932-35 it was probably the most plentiful and wide spread mammal in sectors 3 and 2 and in the western half of sector 4, where it still persists, but I could get no evidence of its presence in sector 1 and if it exists today east of Stuart's Line, it is rare.

Material examined has come from all the above localities except the last four.

***Pseudomys (Leggadina) waitei* Troughton 1932**

Pitjanjarra, *Anoola*.

Locality records exist for Mulka in sector 1; Wollara near the Basedow Range in sector 2; "Macdonnell Ranges", Frazer River, and Hart Range, in sector 4.

Little is known about the distribution and status of this species. Most of the above records are based on material taken prior to 1940. A small non saltatory murid which may be this form is still known to natives in the eastern sectors, but no specimens are available in support. The names *Idjibudoo*, *Witchiburrt* of the Warramunga; *Eeyimma* of the eastern Arunta, and *Umbwinyilpa* of the Ilyowra may be relevant here.

In 1932 it was considered a rare form at Wollara, where it was outnumbered ten to one by *P. (L.) hermannsburgensis* and was not known in the Musgrave Range districts.

The material personally examined comes from Wollara, "Macdonnell Range" and Frazer River.

#### ***Laomys pedunculatus* Waite 1896**

The original localities from which the Horn Expedition material came were Alice Springs (*s. lato?*) and Illamurta in the James Range. I have acceptable records of it since at Hugh Creek in the Macdonnell Ranges; from the Napperby Hills south of Stuart's Bluff Range, also in sector 4; and in the Davenport Range in sector 6.

This species seems now to be rare and no material of it could be obtained during the field work of 1931-35. It is still extant, however, and the three additional records provided are based on specimens taken, though not examined by me—the Hugh Creek in 1935; Napperby Hills in 1950 and Davenport Range in 1953. The latter represents a considerable extension of range—200m. north of Alice Springs.

Material examined is from Alice Springs (*?s. lato*) and from Illamurta, and includes the dubious variety "*brachyotis*".

There are as yet, I believe, no records of the related species *Laomys woodwardi* Thomas (based on Wyndham in the Kimberley Division of Western Australia) within the area here considered, nor of *Zyzomys argurus* Thomas, though the latter has been taken by Tate (1951, p. 265) in the Mount Isa district of western Queensland, about 100 miles from the Central Australian border in sector 6. There are native accounts of a large brush-tailed rat living a subarbooreal life on the lightly timbered plains in the north-west of sector 4 and adjoining portions of sector 5. The Anmatjhera of these parts speak of it as of something belonging to a recent past, and their accounts suggest a *Conilurus* sp. cf. *hemileucurus*.

#### ***Leporillus apicalis* Gould 1853**

Pitjanjarra, *Tchujalpi*; Arunta, *Turulpa*; Pintubi, *Tweealpi*.

Locality records are from the country south of the hills between Ayers Range and the Cavenagh on the 26th parallel; and west of Mount Crombie, in sector 2; and west of Mount Peculiar and at "Alice Springs" in sector 4.



This species, which is believed to have had a wide range over south-eastern Australia, was first noted in Central Australia by Ernest Giles in 1872. It seems always to have had a rather frail hold there and by 1940 had become a rare form even in the virgin districts of the Aboriginal Reserves, and was quite unknown in the pastoral country of the mid Macdonnells where the Horn Expedition obtained it. If it survives today it is probably in the north-west of sector 4, and must be in very small numbers.

Two specimens have been examined, obtained near Mount Crombie in 1933, by Messrs. Hackett and Tindale, and one of the Horn Expedition, from "Alice Springs".

### **Leporillus conditor** Gould 1849

Wonkanooroo, *Wopilkara*.

Although definite locality records are lacking, this species was accorded by general repute, a wide distribution at the beginning of pastoral occupation, in the southern part of sector 1, exclusive of the Arunta desert, and as far west as the Arekaringa tablelands in sector 3. An interval of nearly 400 miles separates the most northerly specimens of *conditor* examined, from the most southerly of the central population of *apicalis*. But this may not be significant and whether the two species ever overlapped in these latitudes as they seem to have done further to the south-east, is now a matter of speculation.

By 1931 it had become very rare in the Lake Eyre districts, and it is doubtful if it still survives there, though it does so far to the south-west near the southern margin of the Nullarbor Plain.

Material examined was taken in 1907 near the western shore of Lake Eyre North, near the boundary of sectors 1 and 3.

### **Notomys alexis** Thomas 1922

Yankunjarra, *Dargawarra*; Pitjanjarra, *Wilchimba*. Other names in use for *Notomys* spp. close to *alexis* but not specifically identified are: Pitjanjarra, *Ilpalya*; Kukatja, *Anpa*, *Illyakirri*; East Arunta, *Ilyowra*, *Allabaiya*, *Kuranja*; Tchingilli, *Munyininni*.

The species of *Notomys* appear, vanish and reappear at such unexpected places and times that it would be highly unsafe to dogmatize as to the local status or distributional headquarters of any of them. The recorded limits of *alexis*, however, exceed those of all other inland species and there can be little doubt that it is the dominant

form today over the whole of Central Australia, with the exception of the districts about Lake Eyre in the south-east. The locality records involve all 8 sectors, and are numerous, especially in the south-west.

In 1932-35 it was exceedingly plentiful in sectors 2 and 3 and in one or two restricted localities such as Wollara in the Basedow Range area and Chundrinna and Walthajalkanna near the Everard Range, it constituted a minor plague. It is still present in these sectors, but it is many years since it has been seen in large numbers. Elsewhere it persists but has not been reported in large numbers in any of the areas personally visited.

Long series have been examined, the peripheral localities being: Warburton Range and Canning Stock Route in the west; Alexandria and Alroy in the north; Haddon Downs in the south-east and Oolarinna below the Everard Range in the south.

#### ***Notomys amplus* Brazenor 1936**

Knowledge of this large species still depends upon Brazenor's original description of two females from Charlotte Waters in sector 3, taken by the Horn Expedition in 1896.

The Pitjanjarra of the Musgrave Range have a name *Arruja*, for a species of *Notomys* much larger than the *Dargawarra*, but it seems to be almost legendary at the present day.

#### ***Notomys cervinus* Gould 1853**

Wonkanooroo, *Oorarrie*.

In the past this species has been much confused with *N. alexis* and *N. fuscus eyreius*, which has tended to give it a fictitiously wide range. Following a re-examination of the type by Morrison-Scott and Tate (1951 *op. cit.*, p. 262) the writer (1960) gave a summary redescription of the species and the locality records now quoted conform to this conception of its characters.

The main distribution belt appears to be to the east and south and only sectors 1 and 3 are involved in the records. These are: Roseberth, 25m. north of Birdsville; Birdsville; Appamunna; Pandi Pandi; Cooncheri; Cowarie; and Mulka, all in the southern part of sector 1 on both the Queensland and South Australian sides of the border and Charlotte Waters in sector 3.

Normally its occurrence is very sparse but it is subject to periodic increase in the Lake Eyre Basin as in 1930-31.

Material has been examined from all the above localities except the first.

### **Notomys fuscus** Wood Jones 1925

Wonkanooroo, *Wilkinsonie*.

The type locality of this species is at Ooldea, south of the area here considered, but a local form of it distinguished by the trinomial *eyreius* (1960 *op. cit.*) occurs sympatrically with *N. cervinus* in sectors 1 and 2. The localities are: Putta Burra; Etadinna; Mulka; Cordillo and Innamineka in sector 1; and at Charlotte Waters in sector 3.

This species has been plentiful in the Lake Eyre Basin recently (1957) but is normally in small numbers.

Material personally identified is from all the above localities.

The specimen assigned under this name to the Basedow Range by Tate (1951, *op. cit.*, p. 263) is an intermediate of *N. alexis alexis* and *N. alexis everardensis*.

### **Notomys longicaudatus** Gould 1844

Arunta, *Ulubaiya* (of Spencer).

Locality records are: Mount Burrell, and the Burt Plain north of Alice Springs, in sector 4; Barrow Creek in sector 5.

This large species was first obtained in Central Australia by the Horn Expedition of 1896, and again taken by Spencer at Barrow Creek in 1901. I have been able to obtain no more recent material and reports of larger species than *N. alexis* though current, are vague as to survival. The word Allabaiya, listed above for indeterminate species of *Notomys*, is obviously the same as Spencer's quoted here. It was heard on the Sandover and at Pituri Creek on the Queensland border of sector 4 but was not applied to a particularly large species.

One specimen examined (date unknown) from Mount Burrell.

### **Notomys mitchelli** Ogilby 1839

Localities from which this species has been recorded are Dickaree, 40m. north of Birdsville, and Birdsville in sector 1; "Alice Springs" in sector 4; and "Central Australia".

The occurrence in the Lake Eyre Basin was recorded by Tate (1951) and has recently been confirmed (1959) but the others are based on old specimens of somewhat doubtful history.

*N. mitchelli* appears to be numerically of minor importance as a Central Australian species, but its general status there is obscure.

Material personally examined comes from the Lake Eyre Basin in sector 1 and from "Alice Springs" and "Central Australia".

### **Hydromys chrysogaster** Geoffroy 1804

Wonkanooroo, *Tinna appa*.

Locality records are from the Barcoo and Diamantina Rivers and outlying lagoons of sector 1, south-east of the Arunta Desert.

The water rat is not in large numbers in this district but is persistent and has adapted itself successfully to the violent fluctuations of its domain, which may change almost overnight from a small pool isolated by hot wastes of sand drifts and stony deserts, to an inland sea. In view of its known hardihood and resource it is somewhat remarkable that it has never colonised the Finke valley where some of the western tributaries provide permanent water; but persistent enquiry there has revealed no trace of it as a living species, nor aboriginal knowledge.

It may be present in the streams of the north-west of sector 7 and north-east of sector 8, but much of their drainage is in Torresian lands.

Material examined is from the Barcoo River near Innamincka, and conforms in a general way to *H. c. fulvolavatus* Gould 1853.

### **Canis familiaris dingo** Blumenbach 1780

Dieri, *Kinturra*; Wonkanooroo, *Mudla*; Pitjanjarra (*s. lato*), *Tchitoodja*, *Papa* (*Papa inurra*); Arunta, *Adnerra*; Ilyowra, *Ay yun ga*<sup>(1)</sup>; Walpari, *Malik*; Warramunga, *Kunaba*; Tchिंगilli, *Iminji*; Mudburra, *Winjiwannoo*.

The dingo is ubiquitous in Central Australia and the present day security of its status is one of the major grievances of the pastoral community. Although steadily persecuted by poison bait, trap and native hunter, it succeeds in maintaining itself—often in surprising numbers—wherever watering facilities and suitable breeding grounds are to be found.

Material examined comes from many localities chiefly in sectors 2 and 4.

(1) This word has been distorted in spelling, in an attempt to contrast it with the Ilyowra word for the euro—*Arrunga*—from which, in rapid speech, it is almost indistinguishable by Europeans.

## CHIROPTERA

Comparatively little is known about the bat fauna of Central Australia. It has sometimes been assumed that aridity and a quantitative reduction of insect life as a whole, are concomitants which must necessarily lead to a parallel poverty of microchiroptera, both in species and individuals. How true this may be, can only be tested by systematic collecting. A study of the known distribution of Australian bats, indicates that in a considerable number of cases where the species has not yet been taken in Central Australia, the records straddle that area, either from north to south or more often from east to west, and it seems likely that more field work will show that some of them are actually exploiting the region, as a seasonal activity, at least.

The writer did not collect systematically in this group and such results as were obtained were more or less incidental to other work. On several occasions native children brought in quite large series of the smaller kinds, which in general they seemed to have no difficulty in locating. The species represented by this material and the localities involved are listed below together with previously published records—some of the latter are of long standing and may need review and the identifications should be regarded as provisional.

The following names are used for bats in general:—Wonkanooroo, *Pinchipinchinarra*; Pitjanjarra, *Pindinarra*, *Oolpoolparrie*; Ilyowra, Arunta, Walpari, *Anjibeera*; Tehingilli, Mudburra, *Nullaminminni*.

***Pteropus cf. scapulatus* Peters 1862**

Warramunga (?and Kaitish), *Petong*, *Bitango*, *Wilwanunga*; Worgaia, *Wundoogarri*; Tehingilli, *Piljeena*; Mudburra, *Wolpaooroo*; Mara, Alowa, *Matchoo*; Yanula, *Murrainjinya*; Larrakia, *Lumuleena*.

Locality records: Arthur Creek, Pituri Creek and Sandover River in sector 4; Frew River in sector 6; Bank Banka in sector 7; Buchanan and Playford Creeks in sector 8.

After a descent by easy stages from the green, well watered country of the northern tribes who use the above names, into the much less well favoured territory of the Warramunga, it was surprising to find the latter well acquainted with this fruit bat as a frequent visitor. The furnace like gorges and spinifex clad quartzite screees of the Murchison-Davenport Range area seem very incongruous habitats for such a creature, but it appears that after rains it exploits for a season the wealth of eucalypt blossom which follows along the creeks and is relished as a food item by the blacks.



The visitations are regular in sector 8, frequent in sectors 7 and 6 and occasional in sector 4. In the latter they are often reported drowned in open tanks.

No material has been examined and it is possible that 2 *Pteropus* spp. are involved—but specimens of *P. scapulatus* were immediately recognized as the more frequent.

#### **Macroderma gigas** Dobson 1880

Arunta, *Elkintera* (Spencer and Gillen).

Locality records are: "Alice Springs", Mount Conway, Frazer River, Ellery Creek Gorge, Field River at ca. 23° 30' S. lat. in sector 4, and "Central Australia".

Although its general status is that of a relict species, the Ghost Bat is less rare than formerly thought and is quite widely spread in Central Australia and adjoining tracts. The recession has been from the south. Old men of the Pitjanjarra knew it 40 years ago in the Musgrave, Mann and Tomkinson Ranges, whence it has now long gone.

Material has been examined from most of the above localities.

#### **Nyctophilus geoffroyi** Leach 1822

Pandi Pandi, Putta Burra on the Diamantina River and "Lake Eyre" in sector 1 (material); Tempe Downs on the Palmer Creek (mat.) and Horne Expedition, in sector 4; Tennant Creek (mat.) sector 7; Alexandria in sector 8.

*N. g. pallescens* Thomas 1913 is based on Alexandria.

#### **Eptesicus pumilus** Gray 1841

Officer Creek (mat.) sector 2; Temple Bar (mat.) and Brook's Soak (mat.) in sector 4.

*E. p. caurinus* Thomas 1914 has been recorded from Mount Isa ca. 100 miles east of the Central Australian border.

#### **Chalinolobus gouldi** Gray 1841

Barcoo River (mat.) sector 1; Eriwunyawunya (mat.) and Ernabella (mat.) in the Musgrave Range of sector 2; Tempe Downs on Palmer Creek (mat.) in sector 4; Tennant Creek (mat.) in sector 7; Alexandria, sector 8.

*C. g. venatoris* Thomas 1908 has Alexandria as its type locality.

**Chalinolobus cf. morio** Gray 1841

“Lake Eyre district” (mat.) in sector 1; Officer Creek (mat.), Ernabella (mat.) and Wollara (mat.) north of Basedow Range in sector 2.

**Scoteinus greyi** Gould 1858

Lower Barcoo River (mat.) in sector 1; Tennant Creek (mat.) and Sturt Creek in sector 7; Alexandria in sector 8.

**Scoteinus balstoni** Thomas 1906

This has been identified in collections from the Canning Stock Route in the Great Sandridge Desert, Wells 43-46, by Glauert (? unpublished record). The localities are in the latitudes of sectors 5 and 6.

**Taphozous australis** Gould 1854

Tennant Creek (mat.) in sector 7.

This bat has previously been recorded from Cloncurry, ca. 150 miles east of the Northern Territory border.

**Taphozous flaviventris** Peters 1867

Junction of Warburton and Tower Creeks (mat.) in sector 4.

This species is stated by natives to frequently appear in the above area for a short time in late summer.

**Nyctinomys australis** Gray 1839

Birdsville in sector 1; “Central Australia” (mat.) = sector 4.

The Birdsville record (Tate 1952, *op. cit.*) is attributed to *N. a. atratus* Thomas 1924 the type of which is from Ooldea, south of sector 2 (Wood Jones 1925).

**Chaerephon plicatus** Buchanan-Hamilton 1800

Alexandria in sector 8.

This yielded the type of *C. p. colonicus* Thomas 1906. The species has been recorded from Cloncurry, 150m. east of the Northern Territory border and I have examined material also from Boulia, just east of sector 1.

## SOME INTRODUCED MAMMALS

Feral populations of horses, donkeys, goats and camels are of local occurrence and though not without influence on the native fauna, call for no special treatment here. It may be noted in passing that the feral water buffalo of the north coast (*Bos bubalis* auct.) drifts sporadically over the northern borders of the area here considered and has been observed at the following localities: Sturt Creek in sector 7 (1925); 40m. east of Alexandria H.S. in sector 8 (1953) and between Tanami and the Granites, sector 5 (1927).

In a different category from these ungulates however, are the house mouse, rabbit, fox and cat which owe their introduction much more remotely to human influence and which are, or may become in future, all pervading. The distribution and status of these pests will no doubt be the subject of properly organized surveys—in the meantime I take the opportunity of recording a few facts which have been ascertained incidentally during this work.

**Mus musculus** Linne 1758

Wonkanooroo, *Punta punta*; Ilyowra, *Undeluquil*.

So far as personal observation goes I have records of this animal as a bush living species only in the southern sectors 1, 2, 3 and 4. That populations of it exist in the vicinity of European settlements in the other sectors is certain, and that it will ultimately be universally distributed, is very probable.

I have already (1939) discussed it at length in the Lake Eyre Basin of sector 1, and have drawn attention to the fact that its populations there are of long standing, considerably differentiated from urban types, and may actually represent a derivation from Asia, long predating European occupation of this country. In this sector it is subject to periodic increase to plague proportions, but elsewhere seems to be as yet, a very minor influence in the faunal economy. In 1932-35 it was in considerable numbers in various parts of sector 2—as at Wollara for example, where W. H. Liddle's settlement at Angas Downs had given it a start—but it was largely masked by the very large populations of *Ps. (Leggadina) hermannsburgensis* and *Notomys alexis*. In the intervening years there have been some sharp local increases in its numbers, but its status as a whole does not seem to have changed much.

*Rattus norvegicus* Erxleben and *R. rattus* Linne, vars., which latter has free living rural populations in many parts of Australia,

do not seem to be able to colonize the Centre. The environment is apparently definitely adverse to the genus, and the two indigenous species which have been recorded have only a very slight hold outside the Lake Eyre Basin.

### ***Oryctolagus cuniculus* Linne 1758**

“*Rabbita*” very generally used by natives.

Locality records cover all sectors, but as a pest it is chiefly of importance in 1, 2 and 3, and north of sector 4 (ca. 22° S. lat.) its numbers are never great. The following progressively northern records were obtained during the work of 1950-56. Kurundi, Lake Nash, between Phillip Creek and Bank Banka, Alexandria, Herbert Vale, near Camooweal, Helen Springs, 15 miles south of Newcastle Waters, and Newcastle Waters. At Daly Waters, Katherine and Darwin there are older sight records, thought to be due to escape of individuals held for experimental purposes, but Ratcliffe and Calaby (1958) record a thriving colony at Normanton on the Gulf of Carpentaria. Some of the reports of large warrens in the north-west of sector 5 are probably due to confusion with *Bettongia lesueuri*.

The arrival of the rabbit in the Centre was via the Lake Eyre Basin in sector 1 in 1889 or 1890. In 1901 Maurice and Murray recorded it as already plentiful in the Musgrave Range area and in 1902, en route to the Cambridge Gulf, they found it as far north as Lake Amadeus. Murray as early as 1905 saw its tracks at Kurundi, in the Davenport Range of sector 6, which is near the present northern limit of uniform occupation.

The enormous reproductive potential of the species is chiefly responsible for its being almost chronically out of equilibrium with its Central Australian environment and its history in most districts is one of plague numbers being built up after unusually good rains, followed by large scale mortality, and then a period—often of several years—of scarcity or near extinction. So far as the local numerical change is concerned, this is more or less characteristic of many mammals of the area, but in the case of the rabbit the amplitude of its population flux is far greater than in any of the native species and it does not appear capable of dispersing protectively as they do.

It should be noted however that good eye witnesses have stated that at times of large scale mortality a proportion of the rabbits have shown symptoms outwardly quite similar to those of modern myxomatosis. Some of these observations predate the deliberate introduction of that virus by 40 years or more.

**Vulpes vulpes** Linne 1758

Pitjanjarra, *Torka* (said to be an attempt to reproduce the English sound "fox" which is very difficult for them).

Locality records involve sectors 1 to 6 but north of sector 4 it is still something of a curiosity. The most northerly report obtained (1956) was between Elkedra and Hatches Creek in sector 6, but there are much more northerly observations to east and west of the Centre, viz.: at Inverleigh, 45m. south-west of Normanton on the Gulf of Carpentaria in Queensland and at Wyndham in the Kimberley Division of Western Australia at ca. 15° 32' S. lat.

Foxes were noted at Anna Creek in sector 3 in 1910 and for two decades subsequently made only slow progress in their northern advance. In the field work of 1932 they were found to be well known to natives and white doggers in the Everard and Musgrave Ranges of sector 2, though still in quite small numbers. They reached the Basedow Range in 1933 and Harper Springs in 1937; the latter is just east of Stuart's Line and near the northern border of sector 4 which is now completely occupied from east to west.

At the present time the densest fox population is centred in sectors 2 and 3 and it is in the virgin, pastorally unoccupied areas of the former that the most spectacular damage to the native fauna has accrued. The bounty on fox scalps which was paid in South Australia in earlier years has unfortunately long been discontinued so that it is not possible to get numerical estimates of its status, as with the dingo. But at Ernabella in the Musgrave Range, where large numbers of dingo scalps are traded in every year, native hunters interrogated in 1956, stated that in the area immediately to the south of the Musgrave, Mann, and Tomkinson Ranges (which yields most of their dog scalps), the fox now outnumbers the dingo. The annual take of dingo scalps in this area for the eight years prior to 1956 is stated to have fluctuated from 500 to 3,000, with an average of ca. 1,300, and the maximum in 1956.

**Felis catus domesticus** Linne 1758

Pitjanjarra (*s. lato*), *Ngaiya* (= meecow), *Mulcoo*.

Although no systematic work has been done on the distribution of the feral cat, it is probable that at the present time it is ubiquitous in Central Australia. Wells' record of one seen during the Elder Expedition in 1891, 100 miles south-west of Mount Squires in the northern portion of the Victoria Desert and 400 miles from any



European settlement, is remarkable evidence of the extent of its penetration and the duration of its tenure.

In sector 1 it sometimes increases markedly during rodent plagues, but elsewhere its numbers are moderate, and as the natives hold it in high esteem gastronomically, it may possibly be checked somewhat, wherever there are active hunting populations.

### SUMMARY

The results of two periods of field work on Central Australian mammals in 1931-35 and 1950-56, are combined with existing data in a summary statement on the distribution of the known species.

The area dealt with is subdivided into 8 sectors which are indicated on a map and briefly defined.

Factors having a potent influence on the status of mammals in Central Australia, are briefly discussed.

Some native names, obtained during the field work, are recorded.

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## APPENDIX 1

Alphabetical list of aboriginal names used in the text.

Name	People	Species
Aehilpa .....	Arunta : Ilyowra .....	<i>Dasyurus geoffroyi</i>
Adnerra .....	Arunta .....	<i>Canis familiaris dingo</i>
Adnungwa .....	Ilyowra .....	<i>Lagorchestes hirsutus</i>
Alarra .....	Ilyowra : ? Worgaia .....	<i>Macropus rufus</i>
Allabaiya .....	Arunta : Ilyowra .....	<i>Notomys</i> sp.
Alluta .....	Ilyowra .....	<i>Bettongia lesueuri</i>
Ampurta .....	Arunta : Ilyowra .....	<i>Dasyercus cristicauda</i>
Andunya .....	Arunta .....	<i>Trichosurus vulpecula</i>
Anoola .....	Pitjanjarra .....	<i>Ps. (Leggadina) waitei</i>
Anpa .....	Kukatja .....	<i>Notomys</i> sp.
Anjibeera .....	Ilyowra : Arunta : Walpari .....	Bats (in general)
Anuljalu .....	Ilyowra .....	cf. <i>Sminthopsis</i> sp.
Areenin .....	Ilyowra : ? Worgaia .....	<i>Macropus robustus</i>
Arrajanuta .....	Arunta : Ilyowra .....	<i>Antechinomys spenceri</i>
Arrawa .....	Arunta : Ilyowra .....	<i>Petrogale lateralis</i>
Arruja .....	Pitjanjarra .....	<i>Notomys</i> sp. (large)
Arrunga .....	Arunta : Ilyowra .....	<i>Macropus robustus</i>
Artoka .....	Anmatchera .....	<i>Rattus villosissimus</i>
Ayoorta .....	Arunta : Ilyowra .....	<i>Thalacomys lagotis</i>
Ay yunga .....	Ilyowra .....	<i>Canis familiaris dingo</i>
Bitango .....	Warramunga : ? Kaitish .....	<i>Pteropus</i> sp. cf. <i>scapulatus</i>
Bukquroo .....	Warramunga : Mudburra .....	<i>Isodon</i> or <i>Perameles</i> sp.
Bunyilba .....	Ilyowra .....	cf. <i>Sminthopsis</i> sp.
Bntgoola .....	Tehingilli .....	<i>Isodon</i> or <i>Perameles</i> sp.
Dargawarra .....	Pitjanjarra .....	<i>Notomys alexis</i>
Deelanda .....	Walpari .....	<i>Lagorchestes hirsutus</i>
Djalku .....	Pitjanjarra .....	<i>Thalacomys lagotis</i>
Eeharricharti .....	Pitjanjarra .....	<i>Notoryctes typhlops</i>
Eeyimma .....	Arunta .....	cf. <i>Leggadina</i> sp.
Elkiutera .....	Arunta .....	<i>Macroderma gigas</i>
Entroota .....	Pitjanjarra .....	<i>Ps. (Thelomys) nanus</i>
Gootanga .....	Warramunga : Walpari .....	<i>Rattus villosissimus</i>
Gowngar .....	Wombaia .....	<i>Trichosurus vulpecula</i>
Idjibudoo .....	Warramunga .....	cf. <i>Leggadina</i> sp.
Illyakirri .....	Kukatja .....	<i>Notomys</i> sp.
Ipalya .....	Pitjanjarra .....	<i>Notomys</i> sp.
Iminji .....	Tehingilli .....	<i>Canis familiaris dingo</i>
Iuappa .....	Wonkanooroo .....	<i>Tachyglossus aculeatus</i>
Inarlinga .....	Arunta .....	<i>Tachyglossus aculeatus</i>
Indwarritja .....	Ilyowra .....	<i>Bettongia penicillata</i>
Inniwallinga .....	Wonkanooroo .....	<i>Tachyglossus aculeatus</i>
Itjaritjara .....	Pitjanjarra .....	<i>Notoryctes typhlops</i>
Jobodo .....	Tehingilli .....	<i>Dasyurus</i> sp.
Joodama .....	Mudburra .....	<i>Macropus robustus</i>
Jungunar .....	Mudburra .....	<i>Trichosurus vulpecula</i>

## APPENDIX 1—continued

Name	People	Species
Kalama .....	Tehingilli .....	<i>Lagorchestes conspicillatus</i>
Kanunka .....	Wonkanooroo : Dieri .....	<i>Bettongia lesueuri</i>
Kapita .....	Dieri .....	<i>Thalacomys lagotis</i>
Karpitchi .....	Pitjanjarra .....	<i>Bettongia penicillata</i>
Keelyilli .....	Tehingilli .....	<i>Tachyglossus aculeatus</i>
Keenika .....	Yankunjarra .....	<i>Dasyurus geoffroyi</i>
Kinturra .....	Dieri .....	<i>Canis familiaris dingo</i>
Kirimbu .....	Mara .....	<i>Macropus robustus</i>
Koongarra .....	Wonkanooroo .....	<i>Macropus rufus</i>
Koorjee .....	Yoworka .....	<i>Caloprymnus campestris</i>
Kowari .....	Wonkanooroo .....	<i>Dasyuroides byrnei</i>
Kudjani .....	Mara .....	<i>Trichosurus vulpecula</i>
Kulara .....	s. Hyouwa .....	<i>Petrogale lateralis</i>
Kulwarri .....	Tehingilli .....	<i>Isodon</i> or <i>Perameles</i> sp.
Kunaba .....	Warramunga .....	<i>Canis familiaris dingo</i>
Kunala .....	Pitjanjarra .....	<i>Macropus robustus</i>
Kunjilba .....	Pitjanjarra .....	<i>Choeropus ecaudatus</i>
Kuunakulumbi .....	Walpari .....	cf. <i>Sminthopsis</i> sp.
Kunula .....	Pitjanjarra .....	<i>Macropus robustus</i>
Kurunja .....	Hyouwa : Arunta .....	<i>Notomys</i> sp.
Luali .....	Larrakia .....	<i>Dasyurus hallucatus</i>
Lumuleena .....	Larrakia .....	<i>Pteropus</i> cf. <i>scapulatus</i>
Manla .....	Pitjanjarra .....	<i>Lagorchestes hirsutus</i>
Makoora .....	? Nadjera .....	<i>Isodon</i> or <i>Perameles</i> sp.
Malik .....	Walpari .....	<i>Canis familiaris dingo</i>
Malowcea .....	Mara .....	cf. <i>Sminthopsis</i> sp.
Marloo .....	Pitjanjarra .....	<i>Macropus rufus</i>
Maradjee .....	Warramunga .....	<i>Macropus robustus</i>
Marra bun .....	Warramunga .....	<i>Trichosurus vulpecula</i>
Matchoo .....	Mara : Alowa .....	<i>Pteropus</i> cf. <i>scapulatus</i>
Meetika .....	Pitjanjarra .....	<i>Bettongia lesueuri</i>
Melatjhani .....	Wonkanooroo .....	<i>Sminthopsis larapinta</i>
Menki .....	Pitjanjarra .....	<i>Ps. (Leggadina) hermannsburgensis</i>
Miaroo .....	Wonkanooroo .....	<i>Rattus villosissimus</i>
Mudagoora .....	Wonkanooroo .....	<i>Dasyercus cristicauda</i>
Mudla .....	Wonkanooroo .....	<i>Canis familiaris dingo</i>
Muleoo .....	Pitjanjarra .....	<i>Felis cattus domesticus</i>
Mundawuljiwulji .....	Walpari .....	<i>Notoryctes typhlops</i>
Mungawyuroo .....	Pitjanjarra .....	<i>Trichosurus vulpecula</i>
Munyinimi .....	Tehingilli .....	<i>Notomys</i> sp.
Munyoolba .....	Arunta .....	cf. <i>Sminthopsis</i> sp.
Muritja .....	Pitjanjarra .....	<i>Dasyercus cristicauda</i>
Murrainjinya .....	Yanula .....	<i>Pteropus</i> cf. <i>scapulatus</i>
Myarin .....	Mudburra .....	<i>Isodon</i> or <i>Perameles</i> sp.
Nadama .....	Warramunga .....	<i>Lagorchestes conspicillatus</i>
Narlodi .....	Walpari .....	<i>Dasyercus cristicauda</i>
Nilce .....	Wonkanooroo .....	<i>Sminthopsis crassicaudata</i>
Nilliyiloo .....	Worgaia .....	<i>Tachyglossus aculeatus</i>
Ngaiya .....	Pitjanjarra .....	<i>Felis cattus domesticus</i>
Nginana .....	Pitjanjarra .....	<i>Perameles eremiana</i>
Ngingulda .....	Tehingilli .....	<i>Tachyglossus aculeatus</i>
Ngynoo .....	Pitjanjarra .....	<i>Thalacomys lagotis</i>
Nullaniniminni .....	Tehingilli : Mudburra .....	Bats (in general)

## APPENDIX 1—continued

Name	People	Species
Nyurloo .....	Pitjanjarra .....	<i>Isoodon auratus</i>
Okirra .....	Arunta .....	<i>Macropus rufus</i>
Oolacunta .....	Yalliyanda : Wonkanooroo .....	<i>Caloprymnus campestris</i>
Oolbulla .....	Alowa .....	<i>Tachyglossus aculeatus</i>
Oolpoolparri .....	Pitjanjarra .....	Bats (in general)
Oorarri .....	Wonkanooroo .....	<i>Notomys cervinus</i>
Oqualpi .....	Kukatja .....	<i>Lagorchestes conspicillatus</i>
O urra .....	Ilyowra .....	<i>Macropus rufus</i>
Pallyoora .....	Wonkanooroo .....	<i>Pseudomys minnie</i>
Papa .....	Pitjanjarra .....	<i>Canis familiaris dingo</i>
Partjada .....	Pitjanjarra .....	<i>Dasyurus geoffroyi</i>
Petong .....	Warramunga : ? Kaitish .....	<i>Pteropus cf. scapulatus</i>
Piljeena .....	Tehingilli .....	<i>Pteropus cf. scapulatus</i>
Pinchi pinchi narra.	Wonkanooroo .....	Bats (in general)
Pindinarra .....	Pitjanjarra .....	Bats (in general)
Pitchi pitchi .....	Yankunjarra .....	<i>Antechinomys spenceri</i>
Poodoojoooro .....	Kukatja .....	<i>Perameles</i> or <i>Isoodon</i> sp.
Pulchida .....	Pitjanjarra .....	<i>Dasyurus geoffroyi</i>
Punta punta .....	Wonkanooroo .....	<i>Mus musculus</i>
Qualba .....	Arunta : Ilyowra .....	<i>Lagorchestes conspicillatus</i>
Ranee .....	n. Ilyowra : ? Worgaia .....	<i>Petrogale lateralis</i>
Taich .....	Ilyowra .....	<i>Isoodon</i> or <i>Perameles</i> sp.
Tajadi .....	Kukatja .....	<i>Dasyurus geoffroyi</i>
Tajinna .....	Walpari .....	<i>Dasyercus cristicauda</i>
Takooladji .....	Tehingilli .....	<i>Trichosurus vulpecula</i>
Talgoo .....	Pitjanjarra .....	<i>Thalacomys lagotis</i>
Tchilkamutta .....	Pitjanjarra .....	<i>Tachyglossus aculeatus</i>
Tehirilya .....	Pitjanjarra .....	<i>Tachyglossus aculeatus</i>
Tehitoodja .....	Pitjanjarra .....	<i>Canis familiaris dingo</i>
Tehujalpi .....	Pitjanjarra .....	<i>Leporillus apicalis</i>
Tebukooro .....	Dieri .....	<i>Macropus rufus</i>
Tehungba .....	Walpari .....	<i>Trichosurus vulpecula</i>
Tehungoo .....	Pitjanjarra .....	<i>Bellongia lesueuri</i>
Tehungunba .....	Walpari .....	cf. <i>Smynthopsis</i> sp.
Tehuuna .....	Mudburra : Tehingilli : Warramunga	<i>Onychogale unguifera</i>
Thulka .....	Wonkanooroo .....	<i>Thalacomys lagotis</i>
Tinna appa .....	Wonkanooroo .....	<i>Hydromys chrysogaster</i>
Tnunka .....	Arunta .....	<i>Bellongia lesueuri</i>
Torka .....	Pitjanjarra .....	<i>Vulpes vulpes</i>
Towala .....	Pitjanjarra .....	<i>Onychogale lunata</i>
Turulpa .....	Arunta .....	<i>Leporillus apicalis</i>
Tweealpi .....	Pintubi .....	<i>Leporillus apicalis</i>
Unbwinyilpa .....	Ilyowra .....	cf. <i>Leggadina</i> sp.
Undeluquii .....	Ilyowra .....	<i>Mus musculus</i>
Undinna .....	Ilyowra .....	<i>Trichosurus vulpecula</i>
Wagunyaenzi .....	Tehingilli .....	<i>Onychogale unguifera</i>
Wailburdi .....	Yankunjarra .....	<i>Myrmecobius fasciatus</i>
Wajingurri .....	Warramunga .....	<i>Tachyglossus aculeatus</i>
Wakunja .....	Mudburra : Tehingilli : Warramunga	<i>Onychogale unguifera</i>



APPENDIX 1—*continued*

Name	People	Species
Walbunba .....	Yankunjarra .....	cf. <i>Sminthopsis</i> sp.
Walpaooroo .....	Mudburra .....	<i>Pteropus</i> cf. <i>scapulatus</i>
Wambanna .....	Mudburra .....	<i>Lagorchestes conspicillatus</i>
Wamburra .....	Worgaia .....	<i>Trichosurus vulpecula</i>
Wangurra .....	Mudburra .....	<i>Macropus rufus</i>
Wannumberra .....	Alowa .....	<i>Dasyurus hallucatus</i>
Warrigiddi .....	Warramunga : Wombaia .....	<i>Thalacomys lagotis</i>
Warroo .....	Pitjanjarra .....	<i>Petrogale lateralis</i>
Watabunmurra .....	Tehingilli .....	<i>Macropus robustus</i>
Wilchimba .....	Pitjanjarra .....	<i>Notomys alexis</i>
Wilkinti .....	Wonkanooroo .....	<i>Notomys fuscus eyreius</i>
Willwanunga .....	Warramunga : ? Kaitish .....	<i>Pteropus</i> cf. <i>scapulatus</i>
Windjarra .....	Worgaia .....	<i>Bettongia penicillata</i>
Winjiwanoo .....	Mudburra .....	<i>Canis familiaris dingo</i>
Wintarro .....	Pitjanjarra .....	<i>Isodon auratus</i>
Winnijungoo .....	Warramunga .....	<i>Dasyurus</i> sp.
Wirtiree .....	Dieri .....	<i>Caloprymnus campestris</i>
Witchiburrt .....	Warramunga .....	cf. <i>Leggadina</i> sp.
Wonyaboonya .....	Mara .....	<i>Dasyurus hallucatus</i>
Wopilkara .....	Wonkanooroo .....	<i>Leporillus conditor</i>
Wnlpoorti .....	Yankunjarra .....	<i>Myrmecobius fasciatus</i>
Wundoogarri .....	Worgaia .....	<i>Pteropus</i> cf. <i>scapulatus</i>
Wyoota .....	Pitjanjarra .....	<i>Trichosurus vulpecula</i>
Yalbo nru .....	Tehingilli .....	<i>Thalacomys lagotis</i>
Yallara .....	Wonkanooroo .....	<i>Thalacomys minor</i>
Yarninga .....	Walpari .....	<i>Thalacomys lagotis</i>
Yarrukaddi .....	Tehingilli .....	cf. <i>Sminthopsis</i> sp.
Yelkamin .....	Walpari .....	<i>Bettongia penicillata</i>
Yenodin .....	Mudburra .....	<i>Tachyglossus aculeatus</i>
Yikowra .....	Wonkanooroo .....	<i>Dasyurus geoffroyi</i>
Yimala .....	Ilyowra : e. Arunta .....	<i>Rattus villosissimus</i>
Yiwutta .....	Arunta .....	<i>Onychogale lunata</i>
Yiwurra .....	Arunta : Ilyowra .....	<i>Isodon</i> or <i>Perameles</i> sp.
Yowirri .....	Walpari : Warramunga : Tehingilli	<i>Macropus rufus</i>

## APPENDIX 2

List of English vernacular names for the species discussed (in the order of the text).

<i>Tachyglossus aculeatus</i>	Echidna: Native porcupine	<i>Bettongia lesueuri</i> ..	Burrowing Rat Kangaroo
<i>Dasyurus geoffroyi</i> .	Black tailed Native Cat	<i>Caloprymnus campestris</i>	Plains Rat Kangaroo
<i>Phascogale calura</i> ..	Lesser Brush Tailed Pouched Rat	<i>Rattus villosissimus</i> .	Long Haired Rat
<i>Phascogale penicillata</i>	Brush tailed Pouched Rat	<i>Rattus tunneyi</i> .. .	Tunney's Rat
<i>Phascogale macdonnellensis</i> .	Fat tailed Pouched Rat	<i>Pseudomys minnie</i> ..	Reese's Rat
<i>Phascogale ingrami</i> .	Ingram's Pouched Rat	<i>Pseudomys fieldi</i> . .	Field's Rat
<i>Dasyercus cristicauda</i>	Crest tailed Pouched Rat	<i>Ps. (Thetomys) nanus</i>	Little Rat
<i>Dasyuroides byrnei</i> .	Byrne's Pouched Rat	<i>Ps. (Leggadina) waitci</i>	Waite's Mouse
<i>Sminthopsis crassicaudata</i>	Fat tailed Pouched Mouse	<i>Laomys pedunculatus</i>	Thick tailed Rat
<i>Sminthopsis hirtipes</i> .	Hairy footed Pouched Mouse	<i>Leporillus apicalis</i> ..	White tipped House building Rat
<i>Sminthopsis larapinta</i>	Finke River Pouched Mouse	<i>Leporillus conditor</i> ..	House building Rat
<i>Sminthopsis murina</i> .	Slender tailed Pouched Mouse	<i>Notomys alexis</i> .. .	Brown Hopping Mouse
<i>Sminthopsis psammophila</i>	Sandhill Pouched Mouse	<i>Notomys amplius</i> : ..	Brazenor's Hopping Mouse
<i>Antechinomys spenceri</i>	Western Hopping Pouched Mouse	<i>Notomys cervinus</i> ...	Fawn Hopping Mouse
<i>Myrmecobius fasciatus</i>	Banded Anteater	<i>Notomys fuscus</i> . . .	Wood Jones' Hopping Mouse
<i>Thalacomys lagotis</i> ..	Rabbit Bandicoot	<i>Notomys longicaudatus</i>	Long tailed Hopping Mouse
<i>Thalacomys minor</i> ..	Lesser Rabbit Bandicoot	<i>Notomys mitchelli</i> ..	Mitchell's Hopping Mouse
<i>Isodon auratus</i> . . .	Golden Bandicoot	<i>Hydromys chryso-gaster</i>	Water Rat
<i>Perameles crenulana</i> .	Desert Bandicoot	<i>Canis familiaris dingo</i>	Dingo: Wild Dog
<i>Choeropus ecaudatus</i> .	Pig footed Bandicoot	<i>Pteropus scapulatus</i> .	Collared Fruit Bat
<i>Notoryctes typhlops</i> .	Marsupial Mole	<i>Macroderma gigas</i> ..	Ghost Bat
<i>Trichosurus vulpecula</i>	Brush tailed Opossum	<i>Nyctophilus geoffroyi</i>	Geoffroy's Long-eared Bat
<i>Macropus rufus</i> . . .	Red or Plains Kangaroo	<i>Eptesicus pumilus</i> ..	Little Bat
<i>Macropus robustus</i> ..	Hill Kangaroo	<i>Chalinolobus gouldi</i> .	Gould's Wattled Bat
<i>Petrogale lateralis</i> ..	Black flanked Rock Wallaby	<i>Chalinolobus morio</i> ..	Chocolate Wattled Bat
<i>Onychogale lunata</i> ..	Crescent marked Nail tailed Wallaby	<i>Scotelmus greyi</i> . . .	Grey's Broad nosed Bat
<i>Onychogale unguifera</i>	Northern Nail tailed Wallaby	<i>Scotelmus balstoni</i> ..	Balston's Broad nosed Bat
<i>Lagorchestes conspicillatus</i>	Spectacled Hare Wallaby	<i>Taphozous australis</i> .	Sharp nosed Bat
<i>Lagorchestes hirsutus</i>	Rufous Hare Wallaby	<i>Taphozous flaviventris</i>	Yellow bellied Bat
<i>Lagorchestes asomatus</i>	Central Hare Wallaby	<i>Nyctinomys australis</i>	Free tailed Bat
<i>Bettongia penicillata</i> .	Brush tailed Rat Kangaroo	<i>Chaerephon plicatus</i> .	Wrinkled lipped Bat
		<i>Bos bubalis</i> . . . . .	Water Buffalo
		<i>Mus musculus</i> : . . . .	House Mouse
		<i>Rattus norvegicus</i> ..	Brown Rat
		<i>Rattus rattus</i> . . . .	Ship Rat
		<i>Oryctolagus cuniculus</i>	Rabbit
		<i>Vulpes vulpes</i> . . . .	English Fox
		<i>Felis cattus domesticus</i>	Domestic Cat